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AMIGA FORMAT

ISSUE 5 / DECEMBER 1989 / £2.95



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GHOSTBUSTERS II

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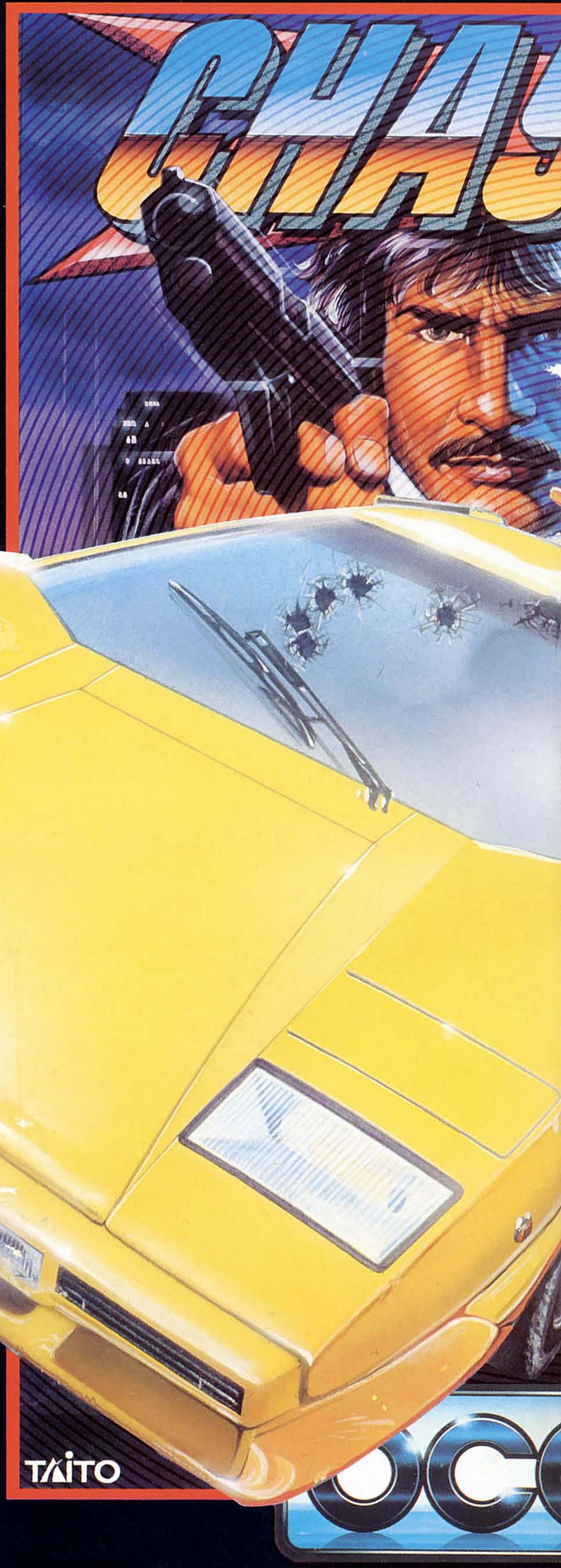
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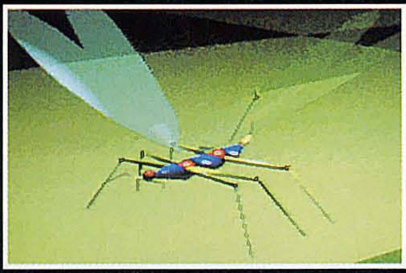
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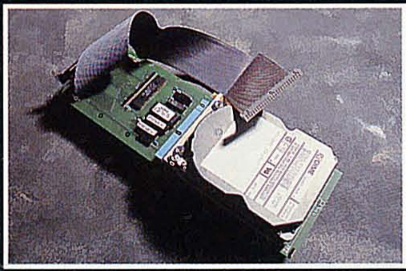
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SCORE 1935747
TIME 21
DISTANCE
SPEED 10
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TAITO CORPORATION



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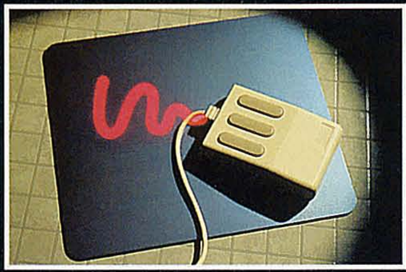
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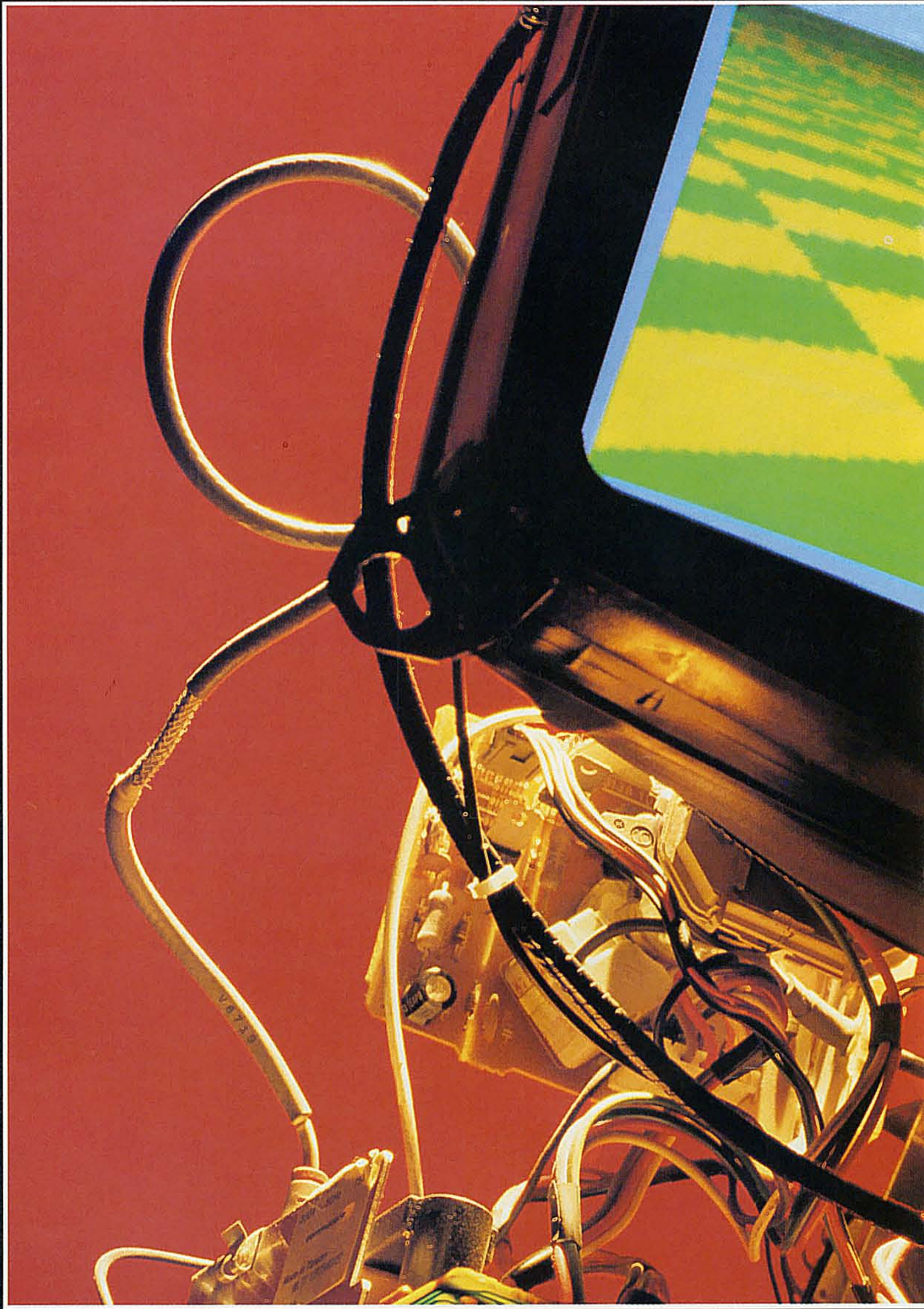
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GAMES

FORMAT GOLD

REVIEWED

DISK EXTRA

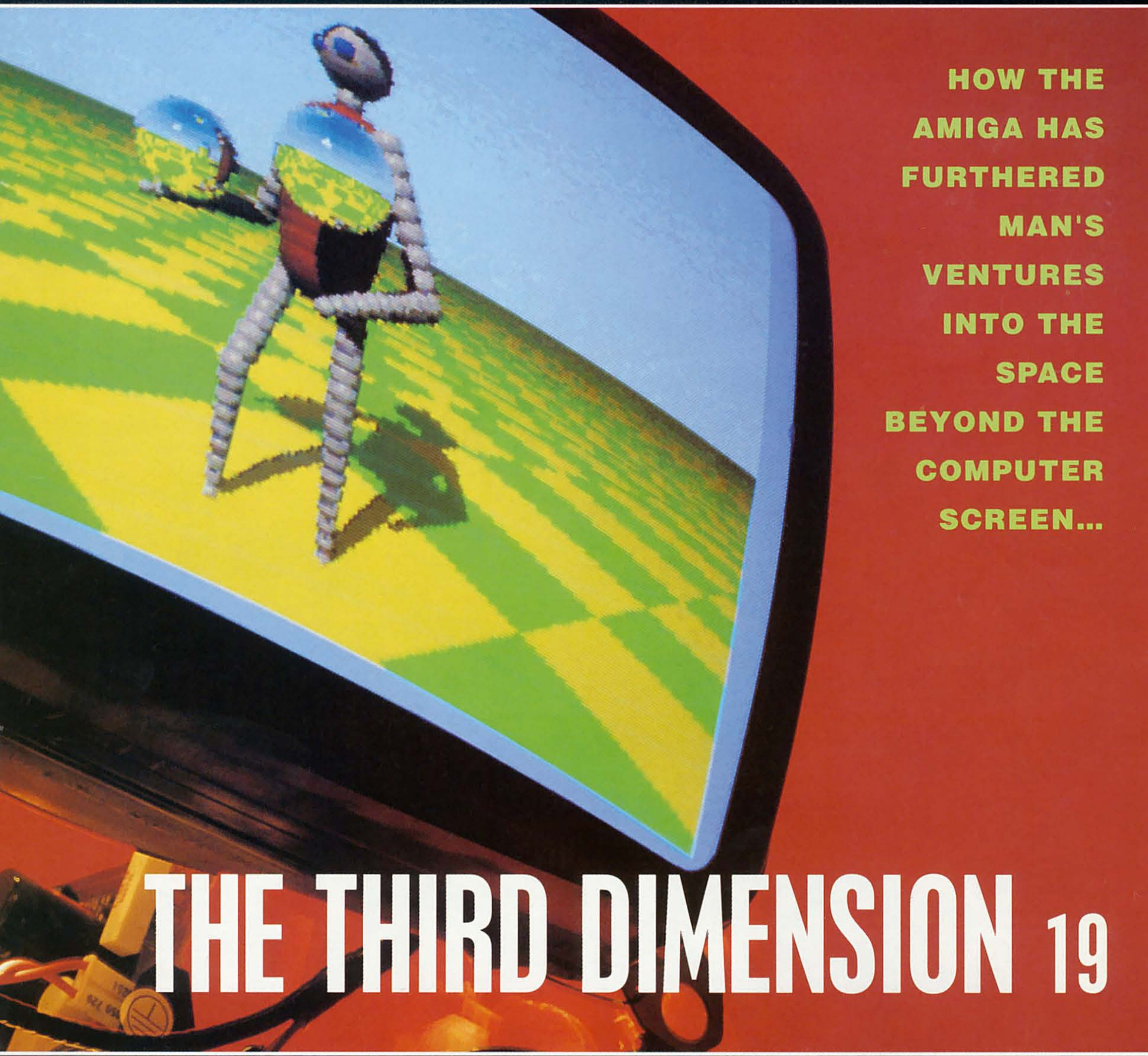
GHOSTBUSTERS II

Extra-special playable demo of Activision's cracking Christmas film licence, wiping out slime in New York City.

ICONIZER: Create your own animated Mouse Pointers ■ **XCOLOUR:** Witty screen colour changer ■ **PSEUDO-OPS ACID HOUSE:** Short but sweet demo ■ **INSECTLIFE:** Art for use with our Graphics section ■ **BRUSHCON:** Use those DPaint brushes ■ **MEMGAUGE:** Displays memory ■ **WORDCOUNT:** Facility for WP ■ **WORKBENCH HACKS:** three awkward little numbers.

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HOW THE AMIGA HAS FURTHERED MAN'S VENTURES INTO THE SPACE BEYOND THE COMPUTER SCREEN...

THE THIRD DIMENSION 19



■ *Power Drift*, buggy mayhem, in Screen Play.

SPECIALS



ACTION & ADVENTURE ALL THE WAY – NILE STYLE
DAYS OF THE
Pharaoh™
THE FATE OF AN ANCIENT CIVILISATION RESTS IN THE FORTUNES OF YOUR FUTURE.
"It's deep absorbing fun to play."
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"In an increasingly popular field of interactive strategy, this is a must for fans of this style."
COMMODORE USER.
"An excellent product... Great in-depth game play."
"Will keep you enthralled for weeks..."
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"Pharaoh combines effective graphics and superb sound in a very playable game. From the word go, it offers a wide variety of options and playable sub-games. If you fancy something different, take a look."
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"The graphics are superb..."
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On the night of the Pharaoh's death, Amon-Re, the Sun God, rescues one young prince from the wrath of Seth, God of the Desert and Evil, bringing him to the fellahs amongst whom he is raised. You are this young Egyptian prince, royal blood flows in your veins and ambition and intelligence move you into trade as a merchant – your opportunity to escape the life of a servant. However, as your wealth increases and position in society rises, evil jealousy threatens your life, it is then that princely courage protects you against your enemies. The struggle to regain your birthright is a life's journey of adventure and action.
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IT'S SHOWTIME!

The Personal Computer Show took place at the end of September and we were there to bring you the highlights from it. We also bring news on Commodore's own show and some exciting news of their plans for the coming year.

COMMODORE COME TO EARL'S COURT











Commodore's stand at the PC Show was an impressively large, white walled affair, with plenty going on inside. There was everything from a games arcade to DTP, graphics to music, even helpful folks from Commodore's technical support department were on hand.

The Commodore Theatre put on presentations throughout the show that demonstrated the Amiga at its best. Demos included *Pen Pal* from Brown Wagh (see review on page 138), *Music X* from Microillusions, *Arena* from ASAP and Ocean, Domark and Mirrorsoft showing off their latest games.

The Bitmap Brothers, authors of *Xenon 2,* furthered their careers as international megastars with an autograph-signing appearance: nice bunch of lads but don't swell their egos too much, will you?

The games arcade had a slightly different angle to it and a very worthwhile one at that. You had to pay to get in, all the money going towards the 'Help a London Child' appeal. Seems like an extremely good idea.

HOLY BAT-TARGETS!

As Commodore launched the Batman Pack on the Wednesday morning of the show, an optimistic sales gentleman announced to the assembled press that the firm hoped to sell 100,000 of the packs over the Christmas period. Somewhere in the audience Steve Franklin, Commodore UK's MD, was blinking furiously and, perhaps, grinning inwardly.

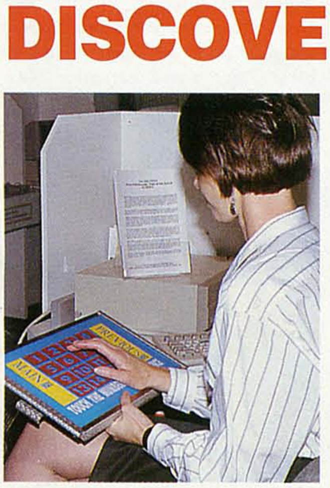
"Well, he's set his own targets now" says Steve later on, chuckling merrily. Steve's own, more realistic estimate is that the Batman pack will sell 60-70,000 Amiga 500s. Still, by any judgement, a massive number.

"I really do believe this is going to be the Amiga's year" says Steve, and it isn't hard to believe. While the Amiga has always been, in his words, "The machine everyone wants", it has kept a niche for itself at the top end of the home computer scene, perhaps an ideal rather than an affordable reality for many people. So though sales were always good, the Amiga has never had a truly massive user base. All that is set to change.

In the year to June 1989, 80-85,000 Amigas were sold. Since then – in just a few months – another 25-30,000 have been bought, bringing the user base up into the region of 150,000 machines: and with the Batman Pack's prospects, the figures can only accelerate. "The Amiga is now *the* machine to have" says Steve Franklin. And he's right.

But what happens to the Batman Pack after Christmas, when the Batconcept is no longer the "something of the moment" that Steve and his team chose? Well, we have hopes of something exciting for the middle of next year: not just another pack, but something much more fundamental to the Amiga. "New hardware?" we ask. Steve Franklin is careful to reveal nothing more, but he stresses that Commodore will never produce any upgrade that the basic 500 user will not have access to. Sounds good for the New Year: the year of the Amiga?

DISCOVER BY TOUCH



One of the highlights on Commodore's stand was Discover from Xebec. It's an interactive information system aimed at providing point of sale information. It consists of a touch sensitive keypad linked to an A2000.

The program can store text, graphics, sound, animations and digitised images to form thousands of pages of information. This can be accessed by key presses on the pad.

Discover is already being used by the National Trust in the New Forest to inform visitors about the flora and fauna there. Xebec can be contacted on 045 383 5482 for more details on installation and customisation, or write to them at Smith House, 1-2 George Street, Nailsworth, Glos GL6 0AG.

MUSICAL YOUTH

Microillusions were at the PC Show and highlight of their stand was naturally *Music X,* their impressive music package. What was even more interesting is the news that a cutdown version is to be released called *Music X Junior,* at the knockdown price of £99.

The original version costs over £200, so this new option comes as good news to anyone looking for a more affordable program. Naturally some things have



■ New *Music X* is on the way.

been lost in the cutdown, namely: 24 tracks instead of 250, no event editor, no time code support and no patch editors.

Music X Junior is intended for a Christmas release and we will have a review of it just as soon as it arrives.

US GOLD REV-EM-UP

US Gold had one of the more entertaining stands at the PC Show. Not only was it packed out with coin-op machines of all the games they have licensed, but it had a Ferrari F40 on it as well. It was to publicise the new game *Turbo Out Run* – check out the Previews pages for more on that. No-one was allowed to touch the car – fingerprints play hell with the wax job don't you know – and we were not allowed to have it as a competition prize. To avoid making you as envious as we were, we didn't print a picture of it.

ROLAND ROLL UP

Roland are a well established name in music keyboards and were at the PC Show demonstrating their first piece of hardware for



■ Roland: showing Amiga module.

AMIGA TEACHES THE CLASS OF THE '90S

A big anouncement at the PC Show from Commodore was of an education bundle for the A500, in addition to the entertainment-orientated Batman bundle. It's entitled 'Class of the 90's' and is aimed not only at primary and secondary schools, but also at caring parents.

Priced at £499, the bundle contains an impressive list of goodies: a Midi interface, *Deluxe Paint II, Superbase Personal* (a database), *Publisher's Choice* (a DTP package including the word processor KindWords), *Maxiplan 500* (a spreadsheet), *Dr T's Midi Recording Studio,* Amiga Logo (the educational programming language), BBC emulator and BBC programs, 10 blank disks, mouse mat, disk wallet and an education file.

The package is such a good one and interest has already been so high that Commodore are also likely to be selling the bundle in quantity to the public as well as education bodies.

The bundle marks a determined push by the firm to make its presence felt in the education market, for so long dominated by the BBC range developed by Acorn. In addition to the bundle a special demonstration team has been established to work with Local Education Authorities, schools and dealers.

Schools that already have an A500 can get the software from the bundle for £150 as an upgrade kit. Other upgrades are also available: *Deluxe Paint II* to *Deluxe Paint III* for £35, *Dr T's MRS* to *Dr T's KCS* for £165 and an improved BBC emulator free of charge.



the Amiga. It's called the CM-32L and is a stereo sound module that plugs into the Amiga to enhance its sound capabilities.

The module is based on Roland's Linear Arithmetic synthesis system which is also used in their synthesisers. It works by mixing sampled sounds and synth tones. Current software that supports it are several of the Sierra On-line adventure games, including *Leisure Suit Larry 3.* Details from Roland on 01 568 1247.

VIRGIN'S BLITZ

Included in the display on the Virgin/Mastertronic stand at the PC Show was the new range of budget software on the 16 Blitz label. They



■ Virgin Mastertronic go cheap.

are selling them for just £4.99 and the first batch of titles are out now.

The range is a mixture of new titles and re-releases of full price games. The initial line-up for the Amiga is *Road Wars, Sorcery Plus, Speedboat Assassins, Pub Pool, Motorbike Madness* and *Little Computer People.*

However, one of the games, *Infection,* which we reviewed last issue is currently on hold. We don't know why but we will let you know the reason as soon as Virgin/Mastertronic can tell us.

WALL TO WALL OCEAN

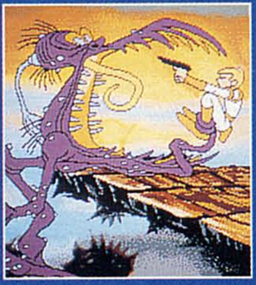
The most imposing presence of the software houses at the PC Show was that of Ocean. They had installed a giant video wall that constantly ran trailers for all their games. In front of it were two exquisite (or grotesque depending on your point of view) American cars. They came complete with giant fins, garish colours and their own security guard – all genuine collectors' pieces.

SPACE ACE

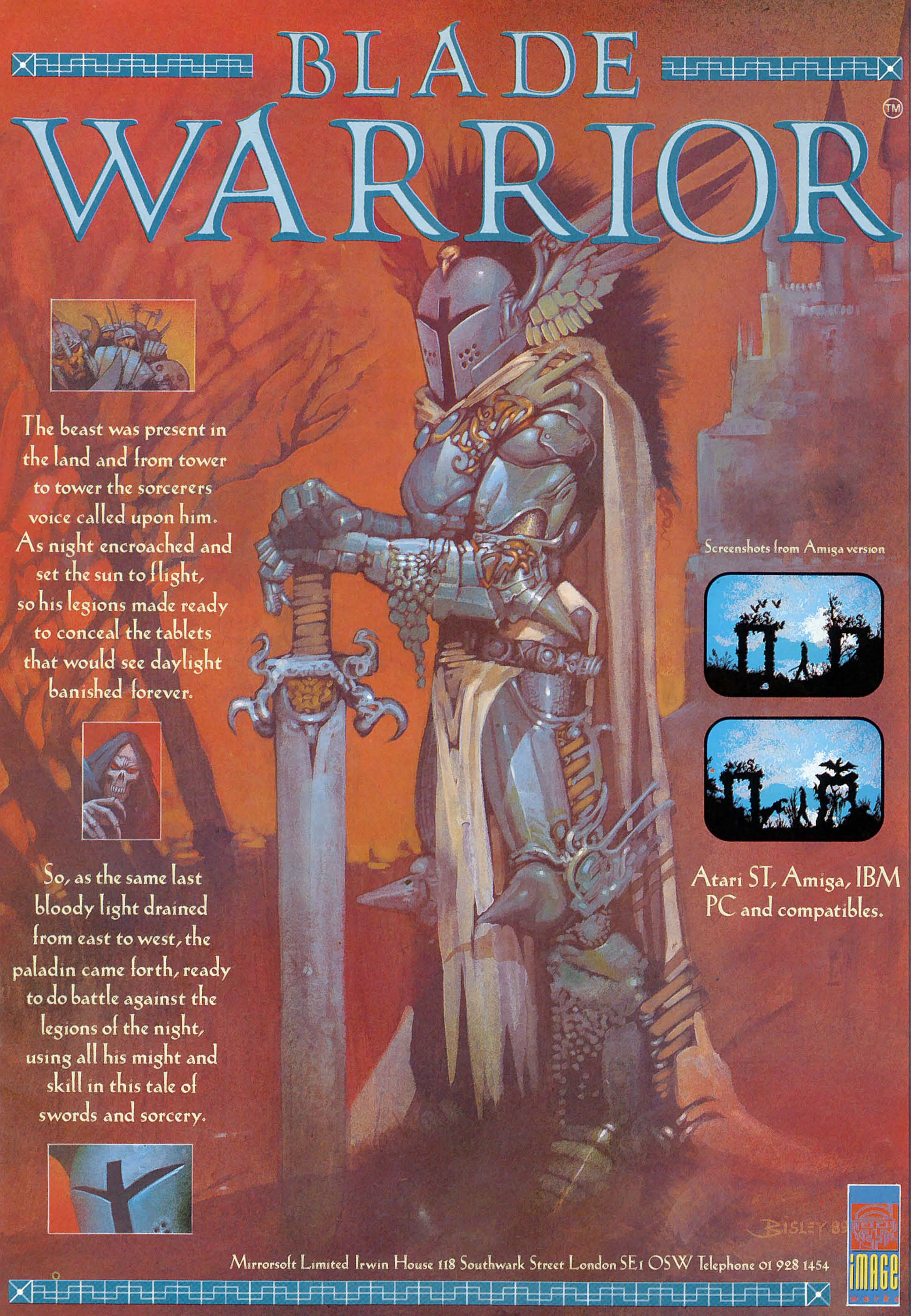
Remember *Dragon's Lair,* the conversion of a laser disc game that came on six disks? Well the follow up in the arcades, *Space Ace,* is about to become a follow up on the Amiga. Thus far we have only had a demo disk picked up at the show, but the graphics and speech on it are exceptionally good.

The original arcade game certainly looked impressive and so it should because it was produced by Don Bluth, ex-Disney animator and maker of films like The



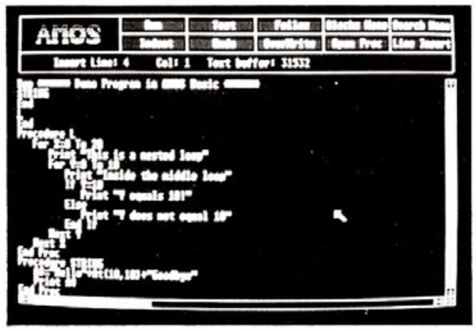


Land Before Time. ReadySoft have produced the game again – they did *Dragon's Lair* – and apparently it will come on less disks than its predecessor but it will cost the princely sum of £44.95. More from Empire on 0268 541126.


BLADE
WARRIOR™
The beast was present in the land and from tower to tower the sorcerers voice called upon him. As night encroached and set the sun to flight, so his legions made ready to conceal the tablets that would see daylight banished forever.
So, as the same last bloody light drained from east to west, the paladin came forth, ready to do battle against the legions of the night, using all his might and skill in this tale of swords and sorcery.
Screenshots from Amiga version
Atari ST, Amiga, IBM PC and compatibles.
BISLEY 89
Mirrorsoft Limited Irwin House 118 Southwark Street London SE1 OSW Telephone 01 928 1454
IMAGE works

AMOS DELAYED

Mandarin's forthcoming game-creation program, Amos, has been delayed until January (1990, that is). Mandarin claim this is partly so that they can incorporate some of the suggestions that people have been coming up with since AMOS was announced. They also charitably admit that it's partially because of the 'notorious complexities of the Amiga operating system'. Anticipation is certainly high for AMOS's arrival: we will review it as soon as it's finished.



BASIC

GFA Basic has been around for about six months now, but the language has never really caught on among Amiga owners. Those in the know have attributed GFA's limited success to two factors: lack of a compiler and more bugs than features! Thankfully, GFA Data Media UK are soon to solve both of these problems with the release of GFA BASIC version 3.041 and the GFA BASIC compiler.

GFA BASIC 3.041 is a major upgrade that removes all known bugs from the previous release. According to Les Player of GFA, he was appalled by the state of the previous release and refused to advertise or sell GFA Amiga until the system was debugged and brought up to the same standard as the Atari version. Like the Atari version, the price has also been dropped by £20 to £49.95. Existing owners of GFA BASIC can upgrade to the new version by sending their original disk back to GFA Data Media.

Also in the pipeline is the GFA BASIC compiler and GFA Assembler system, both of which should be available in early December. As you would expect, the GFA compiler allows you to produce completely stand-alone programs without having to resort to the runtime system bundled with GFA BASIC. GFA Compiler will sell for £29.95 and the GFA Assembler will sell for £49.95.

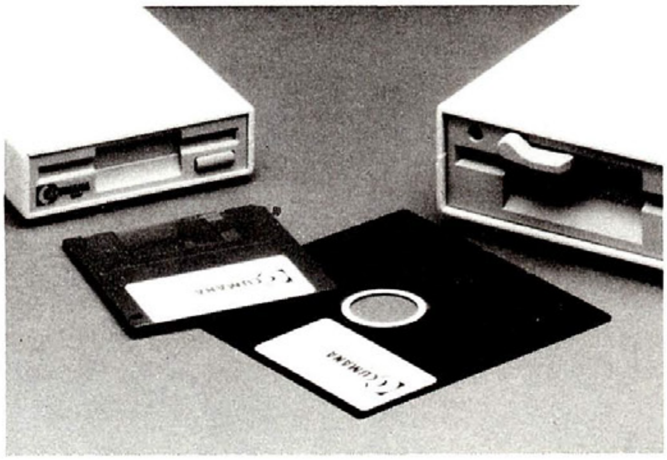
Several books specifically for the Amiga are in various stages of translation. The books are aimed at all programming levels, from the beginner right up to the professional programmer. GFA Data Media can be contacted on (0734) 794941.

DRIVES REVIVED

Cumana has re-styled, re-designed and re-released two disk drives for the Amiga. The two drives are 3.5 inch and 5.25 inch models, compatible with the A500, A1000 and A2000.

The 3.5 inch drive is called the CAX 354, an 80-track double-sided drive with the normal 880K of formatted storage. The 5.25 inch unit is called the 1000S and is compatible with MS-DOS as well as AmigaDOS. It has a daisy chain connector, a data enable/disable switch, 40/80 track switching and 360/880K storage.

The 354 costs £89 and the 1000S costs £134.95. Further details from Cumana on 0483 503121.



COMUS HIT PROBLEMS

The 'Proscore 24' MIDI music sequencing and notation package which was to be launched in the near future for the Amiga, following in the footsteps of Big Band, Studio 24 and Track 24 is held up indefinitely. The other packages were issued first on the ST and very rapidly and successfully crossed over to the Amiga. However the French developers, Comus, have run into problems with the high resolution mode on the Amiga which for various reasons won't support their screen display on the monitors. The future of the Amiga version of 'Proscore 24' at present looks uncertain and no confirmation could be given if the program would even be issued on Amiga.

STEINBERG

The release of the Amiga version of Steinberg's 'Pro 24' has also been held up owing to problems with the copy protection routines. In the light of their experience of widespread piracy concerning the ST versions of Steinberg's programs, there may well be some heavy reworking of protection routines to avoid similar problems with Amiga versions. No date has been given yet for a final version release although version have been seen running at several trade shows.

ROYAL SPELLING BEE

Digita International have come up with a novel plug for their typewriter emulator, E-Type. Apparently it is being used at the offices of the Duchy of Cornwall, from which the Prince of Wales derives income. They manage to contrive a link between this and the Princes recent attack on the standard of English teaching. If you want to see what the computers at the Duchy of Cornwall are running, E-Type costs £39.95: more information from Digita International on 0395 45059.

THE COMMODORE SHOW

If you're reading this issue before the 17th of November, you have still got the chance to attend the Commodore Show at the Novotel, Hammersmith, London. The show runs from 17-19th November and promises many events.

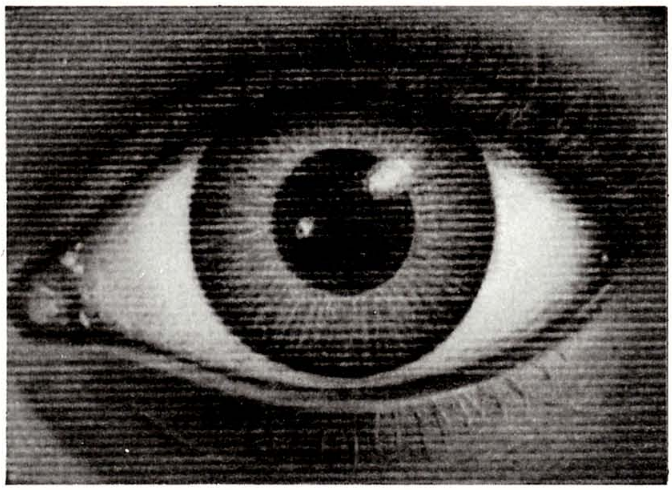
The show is being opened at 10am on the 17th by DJ David Jensen. It costs £5 for entrance, £3 for under-16s and £15 for a family (two adults and up to three under-16s).

Inside there is a Christmas Cave operating on a similar basis to the Commodore arcade at the PC Show. However, this time the 50p entrance money not only goes to the Help a London Child appeal but you get a ticket for a daily prize draw, the prizes consisting of things like a colour TV, watches, T-shirts, joysticks and a football signed by the Chelsea football team.

The show looks like having a much stronger games feel to it this time around because several of the major software houses will be there. Electronic Arts, Mindscape, Ocean, Mirrorsoft and Domark are all due to show. Other exhibitors include Hamley's, the toy store, and a Pepsi Challenge stand.

CHEAP SHOPPER

Going along to the Computer Shopper Show at the Alexandra Palace from November 24th-26th? If you do then produce this issue of *Amiga Format* at the door and get 50p off the entrance fee.



COMM AGAIN

Kuma have launched a new comms program called *K-Comm 2,* at a price of £29.95. It comes with this comprehensive list of features: baud rates from 75 to 9600, send and receive Xmodem files, log files to disk, printer output, Viewdata emulation, Hayes modem support, programmable function keys, autodialling and log-on sequences.

For more on *K-Comm 2* and the rest of the comms scene, check out our feature on Page 99. For more info specifically on *K-Comm 2,* contact Kuma on 0734 844335.

NEW FROM NEWTEK

NewTek, those Kansas based purveyors of high class hardware and software, are soon to release a major upgrade to their popular Digi-View video digitising system.

Digi-View version 4 boasts several very impressive features including the ability to digitise 4096-colour pictures in high resolution. "Not possible!", I hear you techies say. According to Paul Montgomery of NewTek, the system works by using the copper to change the colour registers every line, therefore allowing up to 16 colours per scanline. Unfortunately, pictures produced using this new system will not be useable in existing paint packages (cue *DigiPaint 4?*) although standard screen modes will also be supported. As well as High res HAM, NewTek have also developed a new HAM system that allows considerably sharper images than are possible with currently available digitiser units.

Also soon to be released from NewTek is the now famous Video Toaster unit which is a professional standard genlock, real-time HAM digitiser and video effects unit for the 2000. Those lucky enough to have seen this fabled piece of hardware are known to have suffered from 'blow your socks off, jaw dropping' syndrome for weeks after the event. Also up and coming is a 3D animation package from Allen Hastings, creator of the critically acclaimed *VideoScape 3D* system from Aegis.

We also owe Newtek the courtesy of a brief factual correction. In the last issue's Graphics section it was stated that a Version Two of *DigiPaint* had existed and implied it had just not reached this country. In fact it never did exist. Apologies to everyone concerned.

THE GIFT COLLECTION

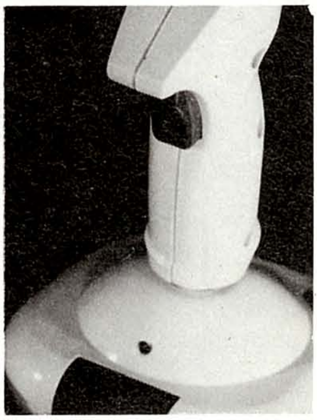
The Disc Company has released a new compilation of programs, aimed very firmly at Christmas gift buyers. It's called the Amiga Gift Collection and adds to the Disc Company's existing duo of compilations, the Starter Kit and Home Office Kit.

The Gift Collection consists of five pieces of software. *Who! What! When! Where!* organizes daily activities like appointments, calendar, clock and address book. *Phasar 3.0* is a home financial management program and *Master-Type* is a typing tutor. There are also two games, *F40 Pursuit* and *Hole-in-one Miniature Golf,* and a joystick. All this for £79.95.

MAGIC MUSHROOM



■ The rather bizarre Turbo Flyer.



■ Play from afar: the Challenger.

Have a look at these for an odd pair of joysticks. There's the Turbo Flyer, described as a 'mushroom design' and the Challenger Remote Control which uses infra-red to give remote control.

The Turbo Flyer looks like a trackball but is in fact microswitch operated: the mushroom design is in the interest of relaxed, ergonomic playing. It has fire buttons on the mushroom and the base, along with a three-speed autofire.

The Challenger is not the first infra-red remote control stick but the makers Euromax say it has the 'very latest and reliable' transceiver. It also has thumb and trigger fire buttons, microswitch action and the three-speed autofire.

The Flyer costs just £7.95 and the Challenger costs £19.95. Details from Euromax on 0262 601006.

STOP PRESS

As these news pages are going to press we've received excellent news that Commodore have confirmed they are going to make the Class of the '90s education bundle available to the public. It will cost £579.99.

MORE STOP PRESS

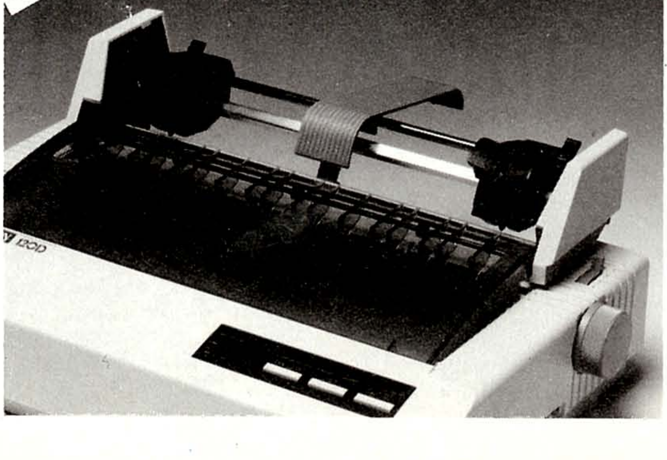
Ocean have acquired the rights to Realtime's *Carrier Command* follow-up, *Battle Command,* once jealously guarded by now-Microprosed label Rainbird. Such words as "delighted", "superb game", "strongest product" and "best game yet" were being bandied about by Gary Bracey, Ocean supremo. Inside sources suggest that however good work on the game may be so far, Realtime are planning to start afresh to make it even better.

Gary Bracey is 63.

MODEL CITIZEN

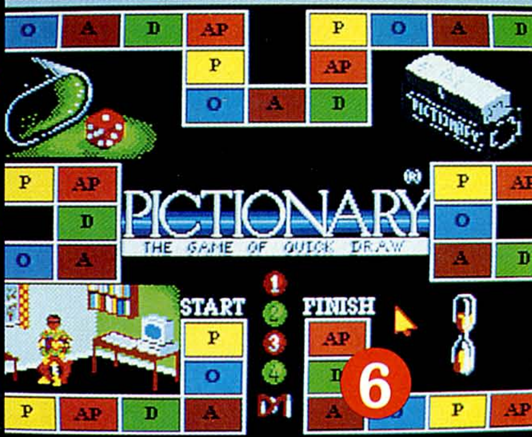
Citizen have revamped their bestselling 120D printer, taking it into its fourth year, in which time it has sold 500,000 worldwide.

The latest alterations are a new tractor feed, a sturdier paper guide, an adapted pressure leaf to provide better paper holding and extended platen lanes to accept all European standard paper sizes. The printer costs £199 and comes with a two-year warranty. More info from Citizen on 0895 72621.

















COMING ATTRACTIONS

Heads up! Here come tomorrow's games!

1 RAINBOW ARTS

Coming soon, from the developers of *Joan of Arc*, is *Day Of The Pharaoh*, an action adventure set, surprisingly, in Egypt. Apparently Seth, God of the Desert and Evil has decided to murder all heirs to the Pharaoh's throne, but luckily one survived: you. Now you have to work your way up the social ladder by becoming a successful merchant and prove to the rest of Egypt that you are indeed worthy to sit on the throne.

2 Back up to date, RA are also about to release *Rock 'n' Roll*, so called because it features more than half a dozen R'n'R tunes to accompany the play. The idea is to guide a ball through 32 levels of puzzles, mazes and baddies. Thankfully you can arm your ball and pick up a plethora of power-ups including bombs, spikes and shields, all of which you'll need when you come up against the dangerous precipices, the awkward ice surfaces and the frustrating valve systems. Ulp!

3 DINAMIC

Spanish software house Dinamic, responsible for such games as *Army* and *Navy Moves*, has been beavering away on a motor racing game called *Grand Prix Master*. It's a bike game endorsed by Jorge 'Aspar' Martinez, who's something of a big cheese in the 80cc category, and it features several races to compete in. Look out for it racing onto the shelves of a shop near you soon.

4 DOMARK

Staying with racing, there will soon be *Hard Drivin'*, the conversion of the Atari coin-op, to get to grips with. The game features both a speed and stunt track and is bound to appeal to those who seek their thrills on four wheels.

5 In a more lighthearted vein there's also the conversion of the wacky coin-op *Toobin'* in the pipeline. Bif and Jet are the stars here and there's nothing they like more than a trip down the river in their car tyre inner tubes, lobbing empty drink cans at the fishermen (the young scamps!) and avoiding the debris in the water. It's wacky action all the way with these chaps.

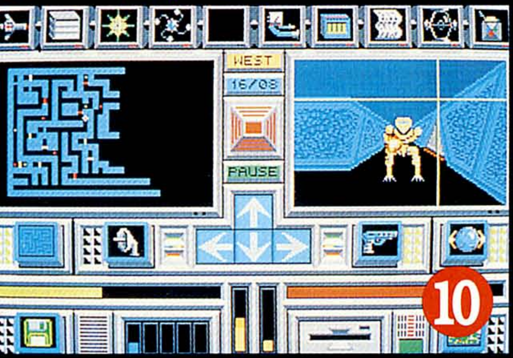
6 On a more serious note, there's *Pictionary*, a game where questions are answered by studying the doodles that appear on screen (it's the odd one out too – why? Because it's the only one without an apostrophe in the title). There's lots of fun and a bit of edjimacation coming from the Domark Twits in the near future: what more can you ask for?

7 US GOLD

The Brummie Big Boys are doing absolutely nothing at the moment. Only joking! There's loads of goodies due soon, including the long awaited follow-up to *OutRun*, called

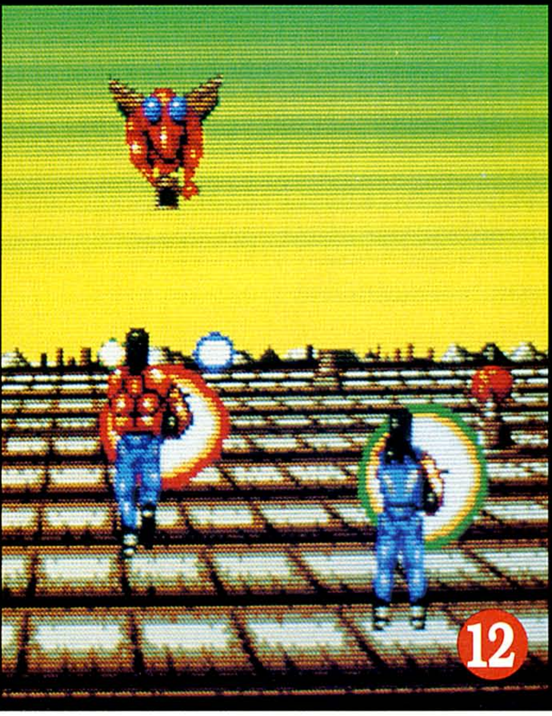




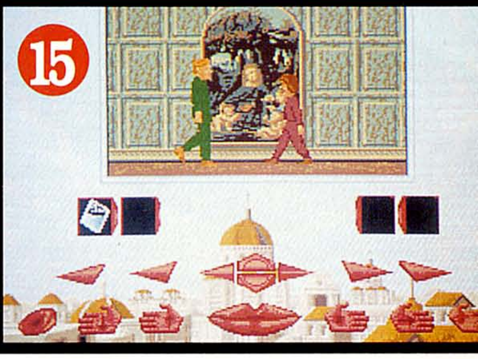












wait for it... wait for it... *Turbo OutRun*. This time you're driving a Ferrari F40 in a four-stage race across the USA, battling with the cops and avoiding the bad guys as you drive through cities, deserts and ice-covered mountain passes. Oh, and brakes are for wimps.

8 Then there's *Moonwalker*, based on Michael Jackson's movie of the same name. It's a story of good versus evil with Mike as a goodie – blessed with the power of transformation thanks to a shooting star – and Mr Big as the baddie. Do you reckon you can become Michael and rescue your friends from Mr Big's clutches? You'll have the chance to find out soon.

9 Or perhaps you fancy rescuing princesses? The valiant knight Arthur does (Arthur translated from the original Japlish 'Arther') in *Ghouls 'n' Ghosts*, the conversion of the Capcom coin-op which is the follow up to the old *Ghosts and Goblins* game. That translated marvelously to the home computer some three years ago: it looks likely this will too.

10 ACCOLADE

Present *Day of the Viper*, a futuristic galactic adventure in which players must rescue a critical defence installation which has been seized by a hostile android called Gar and his robotic army. The only hope of salvation comes in the shape of Viper-Five, an exploration droid which you control from a remote position. Infiltrate the base undetected and get to reactivate the defence computer and you may just save the day: fail and the future looks bleak indeed.

On the simulation side Accolade have certainly been busy, what with *The Cycles*, an International Grand Prix motorcycle racing sim due soon that allows you to race around 15 of the world's toughest tracks: and *Powerboat USA*, an Offshore Superboat racing simulation that puts you into the driving seat of a 600HP Superboat. There are three courses to race and a number of hazards to avoid, not least the other racers!

Even more knuckle-whitening action is on offer with *Blue Angels*, a flight sim based on the heart-stopping antics of the US Navy Flight Demonstration Team. Fancy being trained to perform the Double Tuck Over Roll? Or even the Knife Edge and the 8-Point Roll? Strap yourself into a F/A 18 Hornet and prepare for take off.

11 LOGOTRON

Shoot-em-up fans look to be in for a real treat soon with the imminent release of *Starblaze*, a solid 3D space blast with power-ups, colourful backgrounds and over a hundred alien attack waves. Have you got what it takes to meet the challenge? We will see.

12 Still in shoot-em-up land, but this time with your feet on Terra Firma is Bad Company: a simultaneous two player blast with hundreds of insectoid enemies to blow away, and then a load more of 'em too! Stand by for action.

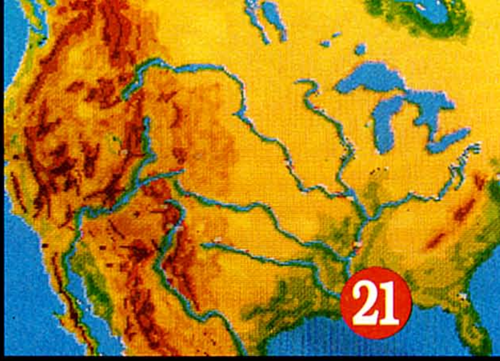
13 EMPIRE

Holy Superheroes! The amazing Spiderman and Captain America join forces and take on the evil Dr Doom in *Dr Doom's Revenge*. The mad genius is about to explode a nuclear bomb over New York unless you can guide Spidey and the Cap'n safely through Dr Doom's fortified castle and save the day in this comic-book style adventure, which also features some 30 challenging arcade sequences with varying skill levels.

For the strategists out there, *Team Yankee* is a 3D tank combat simulation based on Harold Coyle's best selling book of the same name. The unique feature of *Team Yankee* is the player's ability to control four tank units in the team simultaneously. Sounds interesting. And just to keep you bang up to date, on these pages you'll find the first screen shots of earlier reported games...

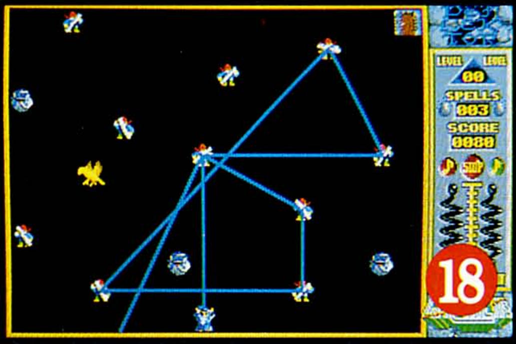




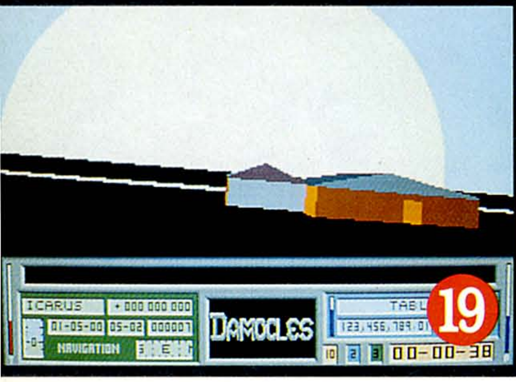












14 15 *Gazza's Super Soccer* and *Time:* looking good, aren't they?

16 GREMLIN

What better to follow the success of the excellent game *Deflektor* than a sequel? That's what Gremlin reckon too, so they've made one. *Mindbender* puts the player in the role of Professor McDuffin trying to transmit spells along magical energy lines, avoiding the annoying witches, elves and gnomes. Once you complete the 50 screens, try making your own using the in-built construction set (then get a friend to try to solve them).

17 If you'd rather get some fresh air out on a BMX bike or a skateboard, there's Skidz, where the aim is to be the 'raddest' kid in town. Earn cash by catching crooks, and respect by pulling off some manic tricks.

If footy is more your sport then watch out for *Footballer of the Year 2.* You'll need a good head for tactics, a sound knowledge of the game as well as the all-important ball skills as you aim to become the number one striker in the game. Gooooaaaalllllll!!!

18 Prefer your games more in the arcade adventure mould? Axel's *Magic Hammer* could be just what you're looking for. It's a Super Mario Bros type game with eight levels, some 200 screens to complete and over 30 different nasties to contend with. Good job you've got your Magic Hammer to clobber them with, then.

19 NOVAGEN

Finally, after over two years of development and 'sneak' previews, Paul 'Mercenary' Woakes has almost finished *Damocles.* It's a solid 3D game in which the player has to prevent the comet Damocles crashing into the planet Eris by interacting and using objects found in exploration. There are loads of clues, and red herrings, so you'll have to keep on your toes the whole time. Stand by for action: fingers and toes crossed, they won't be demonstrating this again at next year's PC Show.

20 EAS

More tennis games! Advantages from EAS is a one or two-player game that allows you to pick the player, the surface and the tournament. Practice against the automatic tennis machine before playing for real because every result affects your world ranking.

21 Also from EAS will be Far West, a cowboy adventure that allows you to build your own cowboy then decide how to go about making him rich. (Rob a bank? Build a gold mine? Hunt bears? It's up to you.) It's a wacky game that combines simulation, arcade action and role playing all in one.

22 INFOGRAMES

SimCity is a city planning simulator, not shown here. The player is the given the task of Mayor and has to run the city like a business. Factors to consider include: residential and commercial zones, pollution, power plants, parks, police departments and traffic. For those who fancy trying their hand at running Tokyo, San Francisco or Dullsville, keep your ear to the ground: amazing isn't it, some people think this is fun!

If that's not the sort of action you're after though how about *Safari Guns?* No, you're not big game hunting: in fact you're out to catch poachers and ivory hunters and generally try to save flora and fauna from the threat of extinction. An ecologically sound game this one.

23 DIGITAL MAGIC SOFTWARE

Possible rival to *Powerdrift* in the buggy-racing stakes is *Drivin' Force,* a fast-paced high-powered racing game from Digital Magic. Plenty of different races are on offer along with the option to compete with sports cars, trucks, F1 racers, buggies and motorbikes, with bonus rounds on jet-skis. This is guaranteed to be very, very quick indeed.



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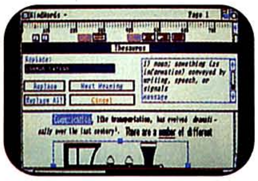
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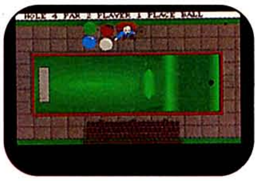
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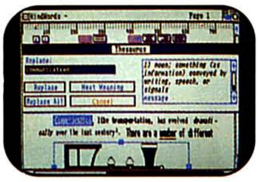
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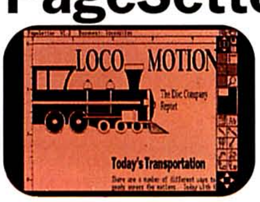
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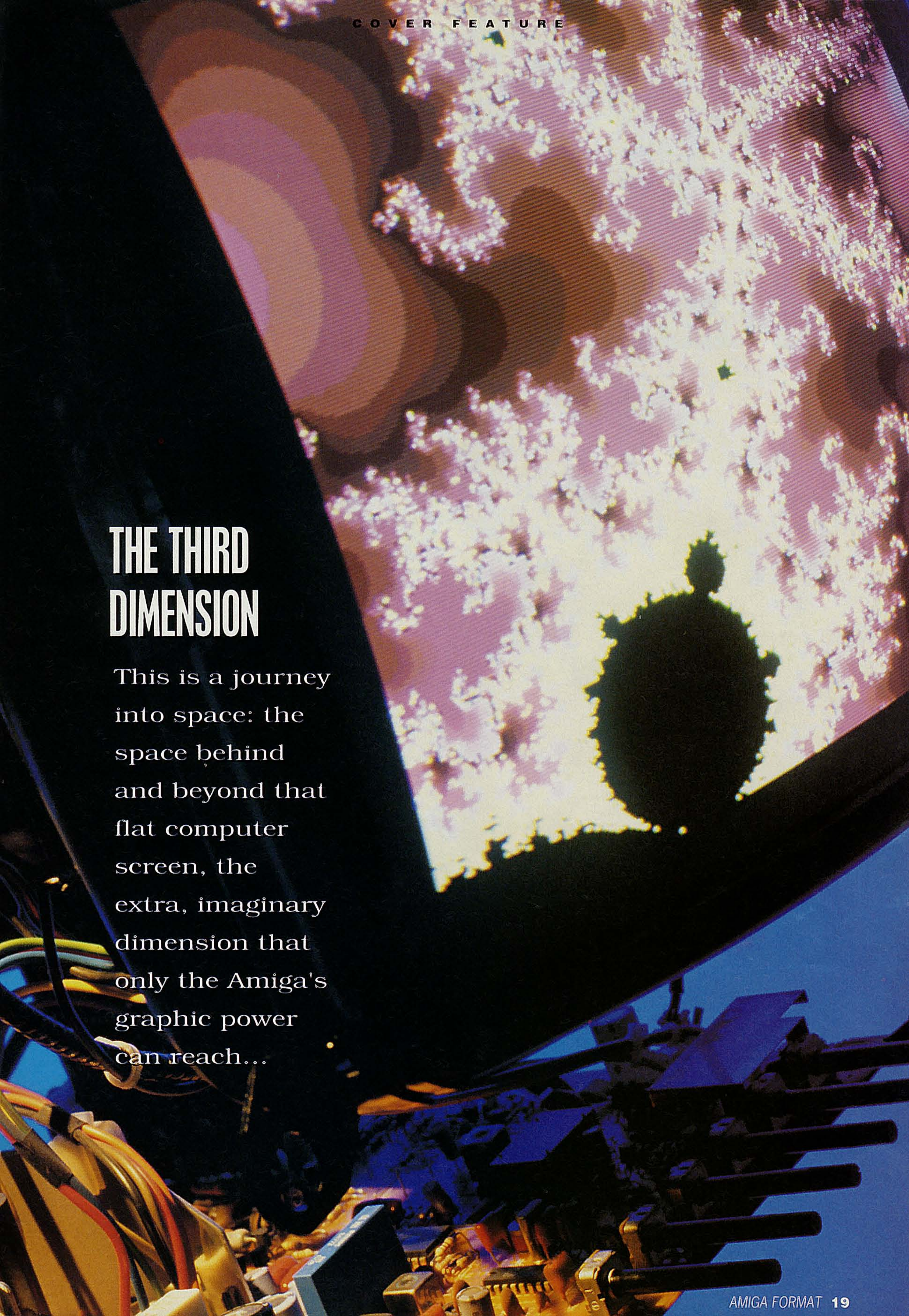
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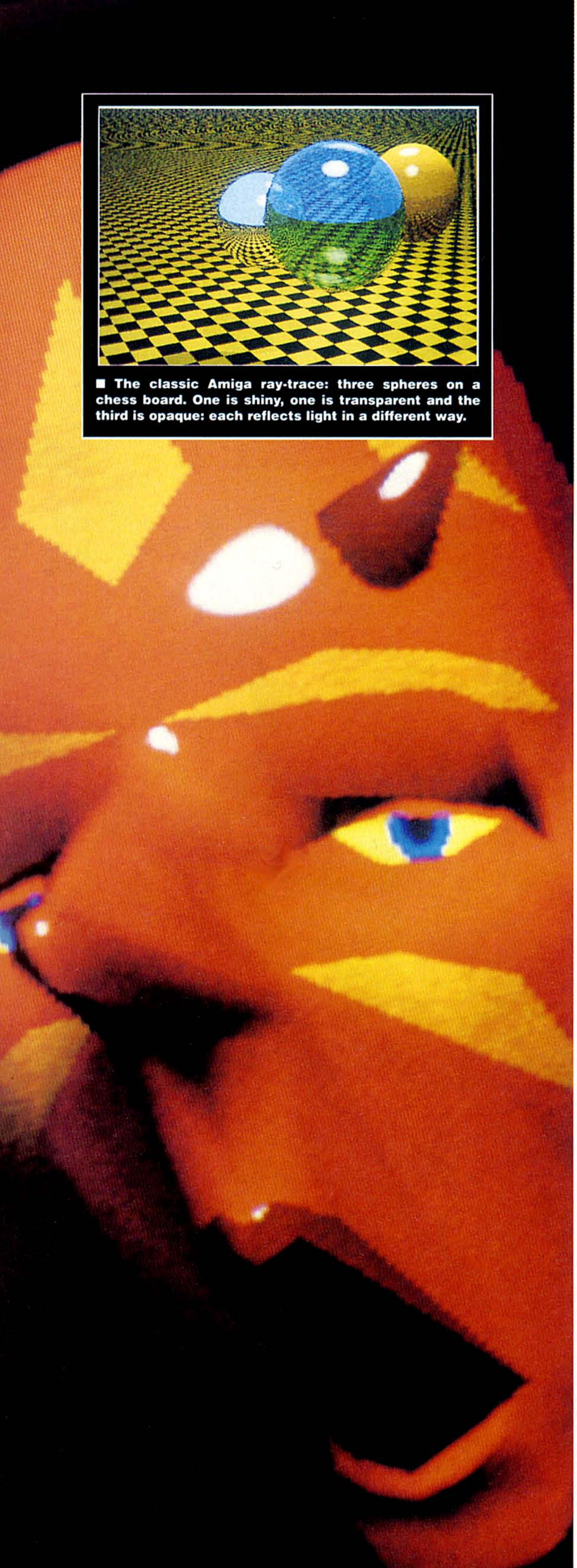
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THE THIRD DIMENSION

This is a journey into space: the space behind and beyond that flat computer screen, the extra, imaginary dimension that only the Amiga's graphic power can reach...



■ The classic Amiga ray-trace: three spheres on a chess board. One is shiny, one is transparent and the third is opaque: each reflects light in a different way.

In the beginning, there was the Big Bang. As the Universe was formed, matter and energy came into being: and at the same time, so did as many as eleven dimensions. Some of these immediately rolled themselves up into little balls and scurried off to account for various weird phenomena, such as electromagnetic radiation, which no-one quite understands. At any rate, there now remain only four dimensions: three of space, and one of time.

When the home computer and the arcade video game arrived, the man in the street caught on to the limitations of a two-dimensional graphic display. People hankered after 'realism', a rather subjective concept that basically involved your megawarpdrive spaceship (pure fantasy) appearing to move into or out of the screen as well as up, down and sideways ('realistic'). The need for the third dimension was there.

Artistic Dimension

Many of the tricks of representing a 3D world on a 2D surface had already been explored by artists. Perspective, for example: objects that are some way away look smaller, so by making something smaller, you could make it look further away. By exaggerating its size, you could make it look disturbingly close.

Moreover, if something was a good way off in the distance it appeared to be fainter, even on a clear day. This became known as 'atmospheric perspective'. Objects lit strongly from one direction cast shadows: put the shadows and shading in properly, and your flat circle began to seem shaped like a sphere. If it happened to be made of something shiny you could even put little highlights in to represent light bouncing off it into the viewer's eyes and appropriately distorted reflections: then it looked really real.

Mathematical Dimension

At the same time as artists were learning to describe the world, so were scientists and mathematicians. They realised two fundamental concepts that were to make the representation of 3D space on a computer possible.

Firstly, Descartes realised that any position in space could be defined in relation to a point by co-ordinates. Imagine the corner of a cube, and the three edges that join there. The corner is a point: the edges are lines. By defining how far along each of these lines to travel you can define any point in space. The lines are known as the x, y and z axes.

Secondly, scientists worked out that any object you see is only visible by virtue of the light that is reflected from it. Since light travels in straight lines and its properties are predictable, it shouldn't be difficult to work out how it behaves in any given situation.

Virtual Reality

So we already had artistic and mathematical ways of interpreting the 3D world. But how would computers go about using them? When computers were first created and for a very, very long time afterwards, they were better at crunching numbers than producing pretty pictures. So mathematics was the obvious place to begin.

And this, in a sense, is where the story really starts. Because the major point about 3D computer graphics is this: no matter if the display is only two-dimensional, the action is all in genuine 3D inside the computer. Mathematically, a three-dimensional 'virtual' reality is being modelled. Inside your Amiga, a 3D imaginary world really does exist.



■ Late arrival in ray-tracing is the Archimedes. Its 32-bit power beats a basic A500, but can't compare with an expanded 2000.

World Views

So how is this world constructed? The starting point is, of course, those co-ordinates. Using these, it is possible to map points anywhere in space. These points can then be joined up with lines to produce a wireframe image of the object. Simple enough so far.

The problems begin when trying to display these objects on the two-dimensional screen. It's all well and good the computer knowing where the front and back of, say, a cube are: but how can it show this to you on a two-dimensional screen?



■ **Transputer processing power gives quantum capacity leaps.**

The mismatch between 2D display and 3D model is made up for by the concept of projection: the transformation of 3D objects onto a 3D plane. Projection is actually a relatively straightforward concept, but the maths can be quite complex.

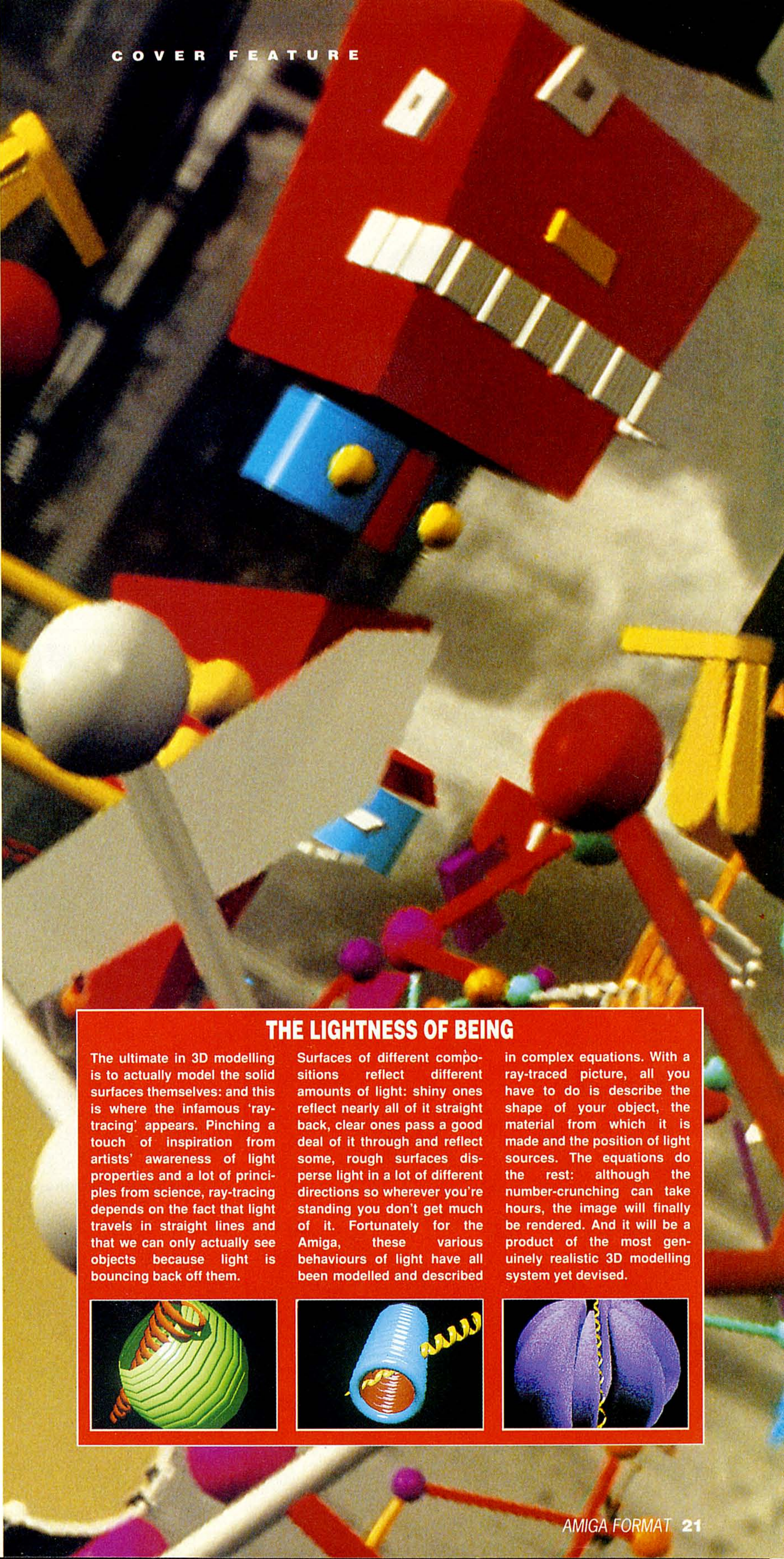
Projection simply involves imagining the object you are looking at to be 'behind' the computer screen and a 'viewpoint' to be set in front of the screen. Lines can then be constructed from points on the object to the viewpoint, and where these lines pass through the screen (the screen is known as the 'plane of projection') the image of the point can be drawn.

This viewpoint idea may seem rather obvious because we are so used to imagining that the 3D world is behind the screen and we are looking at it from outside: but remember that the object isn't really in there and the viewpoint is completely imaginary. If you move your head from side, your view of an object on the screen won't change: the imaginary viewpoint hasn't changed.

Fresh Perspectives

The most basic form of 3D projection is isometric. Isometric projections make no attempt to represent distances by anything other than their real lengths: which means they lack a degree of realism by comparison with normal human perception.

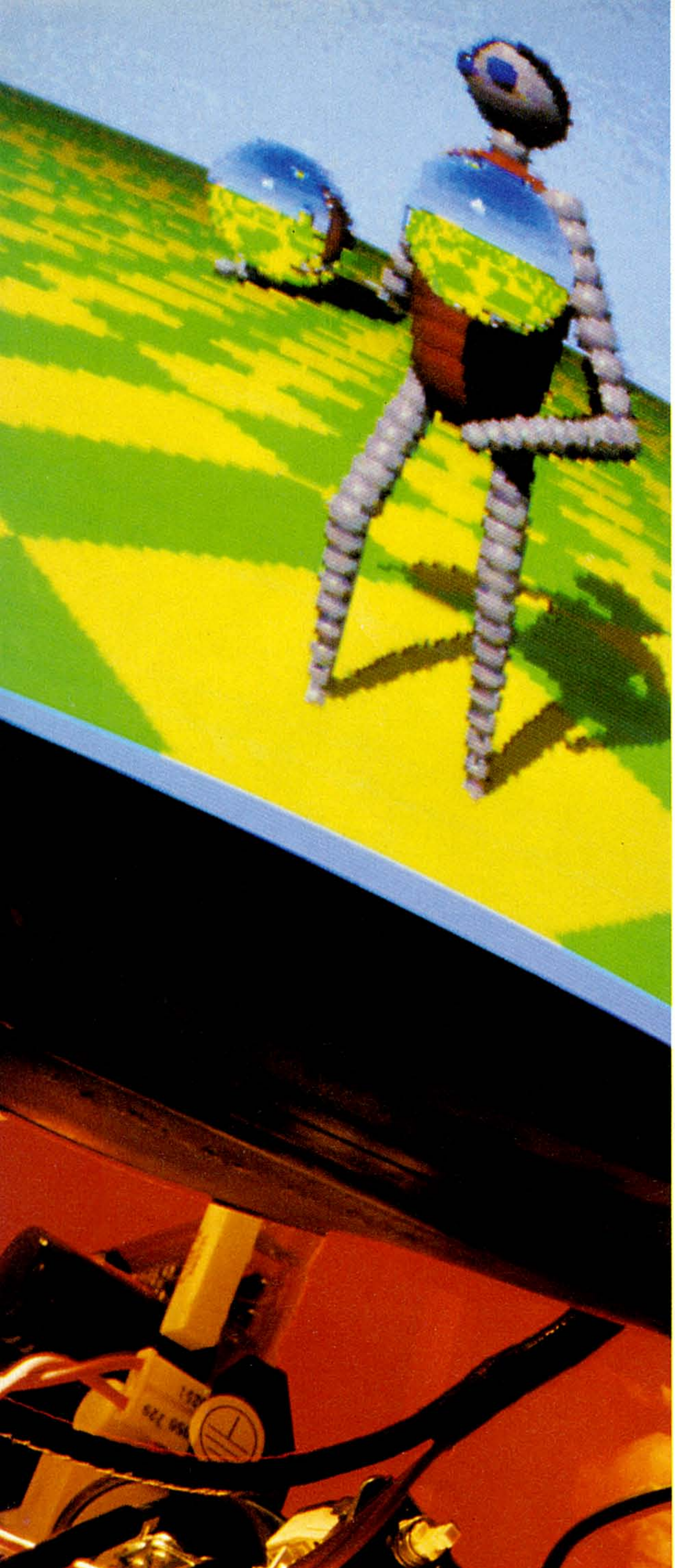
This is where those old, artistic principles of perspective start



THE LIGHTNESS OF BEING

The ultimate in 3D modelling is to actually model the solid surfaces themselves: and this is where the infamous 'ray-tracing' appears. Pinching a touch of inspiration from artists' awareness of light properties and a lot of principles from science, ray-tracing depends on the fact that light travels in straight lines and that we can only actually see objects because light is bouncing back off them.

Surfaces of different compositions reflect different amounts of light: shiny ones reflect nearly all of it straight back, clear ones pass a good deal of it through and reflect some, rough surfaces disperse light in a lot of different directions so wherever you're standing you don't get much of it. Fortunately for the Amiga, these various behaviours of light have all been modelled and described in complex equations. With a ray-traced picture, all you have to do is describe the shape of your object, the material from which it is made and the position of light sources. The equations do the rest: although the number-crunching can take hours, the image will finally be rendered. And it will be a product of the most genuinely realistic 3D modelling system yet devised.



coming into play. Perspective views imitate real life by making things appear smaller as they get further away. By adding in a few more equations, you can make the far end of large objects appear to diminish in size as they stretch away from the viewpoint.

This is not quite the same principle as flying a whole object off into the distance or making it grow bigger as it appears towards you: this is done simply by scaling the object to make it larger or smaller.

These few basic principles form the basics of the wireframe graphics used in Computer-Aided Design packages and so familiar in games such as *Battlezone* in those early arcade days or *Elite* on the 8-bit machines. But 3D wireframes would only remain realistic for a limited time. Before long, people would begin to want genuinely solid-looking objects to appear: and this is where 'filled' or 'solid' 3D came in.

Solid Reality

The first step to producing a filled 3D image is to remove 'hidden' lines on an object, so you can no longer see right through it. This is relatively easy to achieve with the viewpoint methods used in perspective drawing, and allows solid-looking objects to be constructed by having the visible planes filled in. On-screen, this process is a simple bitplane function working in relation with the actual 2D screen display, so is not a true 3D modelling function.

Perspective is just one way, although very effective, of producing 'depth awareness' in the viewer. As soon as the planes on an object are filled in, other methods come into play. In the quest for realism, further depth awareness information can be given by pinching another artistic trick: that of atmospheric perspective. By simply shading an image as it appears to recede into the distance, a much greater impression of depth can be conveyed.

GAMES WITHOUT FRONTIERS

Although 3D techniques are used nowadays in many sophisticated ways, from high-powered design, medical or spaceflight modelling to US Air Force flight simulators, many of the most advanced tricks crop up in games programming. As one expert during this year's Milcomp (an annual exhibition of the latest military hardware) commented: "The military's only ahead in areas like aiming systems. If you want real time graphics response go down to the arcades: that's where all the fast sim stuff is happening…"

Into The Battlezone

The first use of 3D in games was in Atari's coin-op *Battlezone*, a simple tank sim converted for most machines but never the Amiga. Vector graphics were pioneered in games by *Asteroids*, and *Battlezone* was followed by 3D vector games like *Tempest* and *Gravitar*.

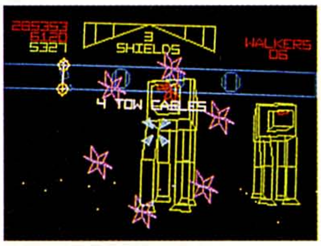
Every computer since has had its fair share of vector graphic games and even with the graphic power of the Amiga programmers opted for wireframe images to start with. The reason was always that filled 3D took too much processing time and slowed things down.



■ **The shape of things to come. (Left) 3D shoot-em-up *StarBlaze*, and (Right) *Dark Sentry*, the first ray-traced game ever.**

Wire

Starglider was one of the early big games on the Amiga and made a name for author Jez San. It did not create a very convincing world, but it was a classy shoot-em-up. Basically it was nothing you couldn't do



■ **Wires in *Empire Strikes Back.***

on an 8-bit machine: games like *Elite* and *Starstrike* proved that.

A better job of achieving the feel of an alternative world was made by *Mercenary*, despite the fact that it too relied solely on wireframe graphics. Here you could explore the planet Targ on the surface, in the air and even underground. There were objects to interact with – even if they were all in outline only and a bit tough to recognise for what they were. Later games have continued to use vectors even though solid 3D has long

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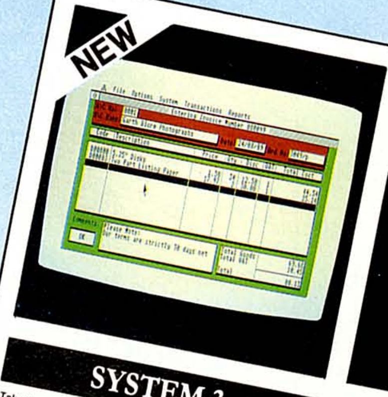
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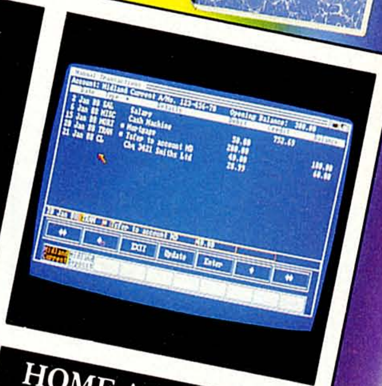
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been possible at reasonable speed. In the case of *Star Wars* and *The Empire Strikes Back* it was because the original coin-ops used vectors – no point changing the succesful originals is there? Another vector game, *Sky Chase*, seemingly used them purely in the interests of speed, and it certainly was fast – but got boring nearly as rapidly.

However, these games were making no progress in developing game worlds and for the most part people were becoming tired of wireframe images – what's the point of having an Amiga with a 4,096 colour mode if you don't use any of them? One of the noticeable transformations that highlighted vector inadequacy was that of *Elite* from a vector game on the 8-bits to solid 3D on the Amiga. Clearly if a game was to impress now it had to be solid.

Bits of Solids

Just because filled 3D was the obvious route to take did not mean everything was being developed on the Amiga or ST. Striking Amiga games were actually being converted upwards from the 8-bits, the limited capacity of which had even been stretched to do solid 3D. *Sentinel* created a surreal world of energy transfer, where the landscapes were certainly distinctive but simple. A far more convincing contribution are the games created using the 'Freescape' graphics system. The first of these was *Driller* – a world similar to that created in *Mercenary*, but where everything had a very solid look to it.

Now we are really starting to get places – whole new dimensions where objects look solid, you can explore around and inside them, even bump into them or move them. So far, though, all the pioneering work had been done on the 8-bit machines, the Amiga versions are naturally better but they are still just improvements of established techniques. Where were all the brave new worlds that 16-bit computers promised?

Enter the revolution in 3D games. Given the power of the Amiga, Atari ST and Acorn Archimedes, programmers expanded their horizons to turn dull, colourless screens full of straight white lines into vibrant, multi-coloured worlds inhabited by reassuringly solid objects. All at once everyone who was anyone seemed to be producing a 3D game David Braben, co-author of Elite, wrote *Virus;* Realtime, authors of 3D Starstrike, wrote *Carrier Command;* Mike Singleton, famous for the *Lords of Midnight* trilogy, wrote *Whirligig;* Jez San's company Argonaut did a sequel to *Starglider;* and *Mercenary* programmer Paul Woakes produced *Backlash.*



■ The stunning filled-3D world of *Virus*, poulated by trees and fish.

Catching Virus

A truly fantastic world created purely for the purposes of a wild shoot-em-up. The landscape is a patchwork quilt that rises into hills and dips down to sandy beaches by the shore. There are trees and buildings dotted everywhere and flying fish thrust themselves out of the water trailing droplets behind them and re-entering with a splash. It's a remarkable piece of programming that was also an incredible game to play.

Invading this picturesque land were aliens, spreading virus spores to mutate the vegetation. The player hardly had time to notice the stunning scenery as he banked, dived and climbed a very responsive, but difficult to master, hover-plane in deadly combat with seeders, drones, fighters and pests. The aliens all looked different – you could even tell what they were from their shadows as they flew above you off screen.

Here was the sort of variety and believability that gameplayers had been waiting for – and there was more to come. War games had always been about moving hieroglyphic symbols across two-dimensional maps until *Carrier Command* came along: for a war game it most certainly is. How else can you describe a game in which you are asked to conquer an island network using an aircraft carrier, fighter planes and amphibious tanks. Who would have thought a war game could have such stunning graphics and absorbing gameplay both at the same time?

In terms of a combat simulation it had tremendous realism and the graphics brought it to life. The best scenes were to be had by hopping into a Manta fighter, blasting off the carrier deck and swooping around islands investigating their defences. You could even take to the water in a Walrus and rumble up onto an island to see things up close. In-depth strategy was now being combined with state-of-the-art visuals to make games that looked good as well as lasted long.

In the Whirligig

Enter *Whirligig:* another game that had a programming technique developed for it – 'Lightsource 3D'. It was so called because as your spaceship and other craft wheeled through the depths of the universe, there was a fixed light source casting shadows and changing the lighting effects on them, The effect is delightful to behold and there is plenty of chance to do just that because the game has four billion locations.

Sequels don't usually tend to be that impressive, but *Starglider II* was in a different league to its predecessor. There wasn't a wireframe in sight, just a whole planetary system to be explored – from skimming the surface of the sun, where the space whales roam, to entering a planet's atmosphere and diving underground into a complex tunnel system.

What really stood out was the variety of objects, the detail achieved and the gorgeous animation of characters like Pacworms, Egron ducks, stompers and, of course, the space whales. Once again it was not just a graphic extravaganza either, a tough game task involving plenty of exploring of this vast and beautiful game world was required – and that was certainly no chore.

The explosion in 3D has meant it is now the norm rather than the exception – wireframe graphics just don't cut it any more and have been relegated to the leagues of budget software. Vectors will always be a favourite of many because they have a unique style and feel all their own, but graphics technology has moved inexorably on from them.

Here's a look at some of the more recent offerings, taking the genre ever further into the realms of the imagination:

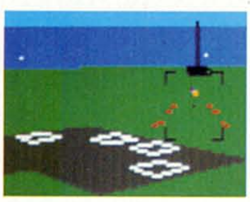
Voyager: Ocean's contribution to the scene has a familiar starting point – all the way back to *Battlezone* and trundling around in a tank. The similarity doesn't go much further though because there is a great variety of opponents, weapons and objects. It's lovely to look at, even if the gameplay ends up being a bit repetitive.

Powerdrome: Here the 3D was used to give a tremendous feeling of speed around a futuristic racing circuit. Solid 3D was so essential because it is not just left and right turns but diving into underground complexes as well. The walls loom with frightening speed and although the tracks lack detail graphically they have all they need to convey an authentic racing feel. Only problem is, it's a hard game to control.

Interphase: The most recent of the genre is probably the most surreal so far – plunging the player into the heart of a computer security system. The 3D is some of the fastest ever and, as Andy Smith said in his review last issue, "you're left with the impression that there really is a 3D world in there."



■ *Sky Chase*



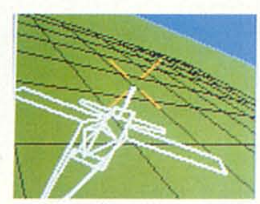
■ *Elite*



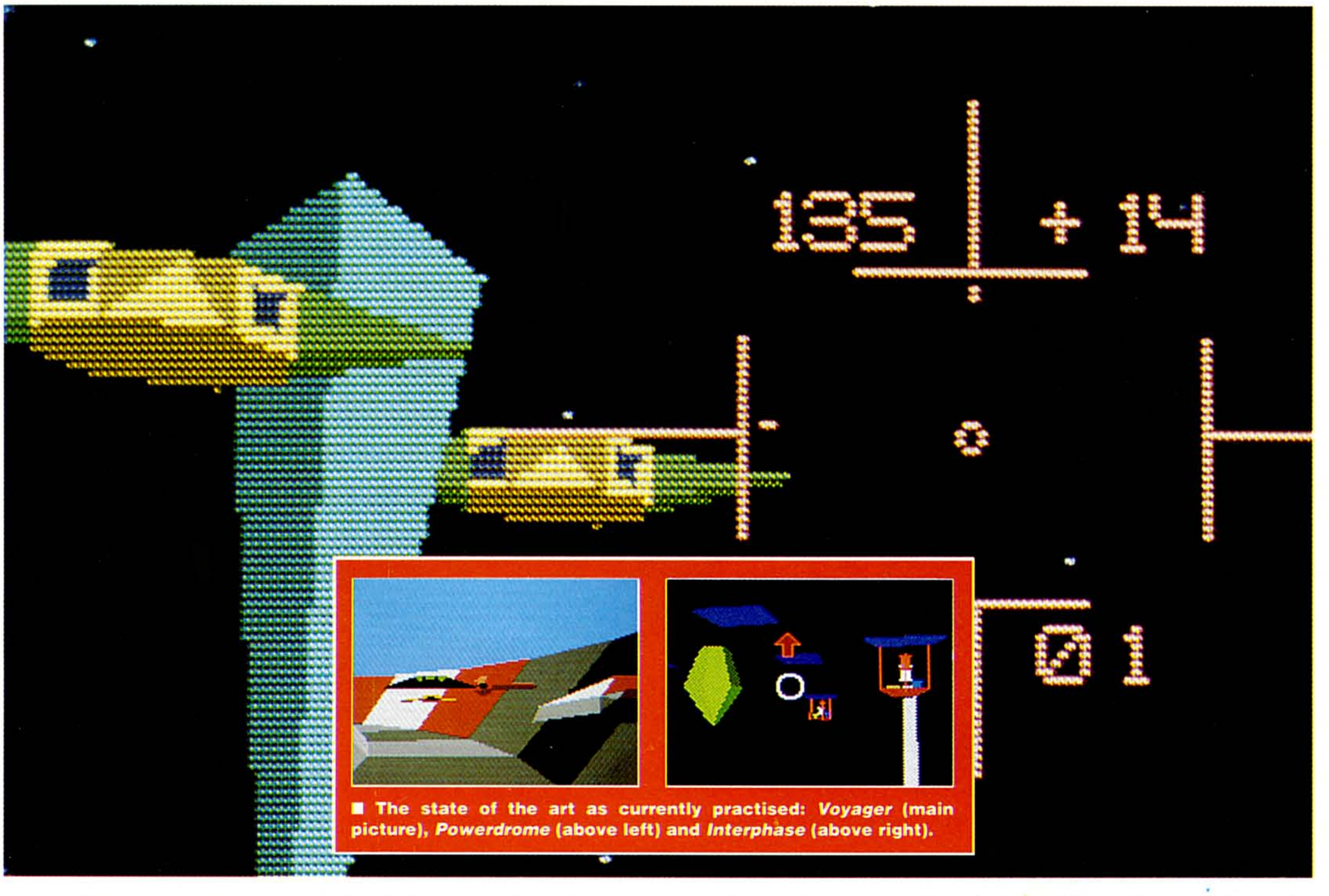
■ *Sentinel*



■ *Carrier Command*



■ *Starglider II*



■ The state of the art as currently practised: *Voyager* (main picture), *Powerdrome* (above left) and *Interphase* (above right).

Isometrically

One type of 3D that was never explored much on the Amiga was the isometric 3D beloved of Spectrum arcade adventures. There was *Airball* and other minor attempts, but isometric 3D seemed to have died out. That is until *Populous*.

Okay, it may not be the conventional idea of solid 3D, but it sure makes a great job of creating an alternative reality. Forget being part of another world – you are the god of this one. The 3D is not to be sniffed at either, all that landscape altering is not easy to program. Here's a thought for you – *Populous* with graphics like Virus and a completely free-roaming camera angle not limited to the isometric perspective...

Simularity

One of the major areas of 3D research has been in flight simulators. The derivation is clear, from commercial flight sims where the quest for realism continues unabated. That quest has been matched on the Amiga where the graphics keep on getting better, as does the combat involved.

The big breakthrough was by *Interceptor*. Anyone who saw the rolling demo of the F-18 taking off from a carrier and flying around the San Francisco Bay knew they it was a classic game, still the yardstick by which others are measured.

These days it has stiff competition from several games like *Falcon, F-16 Combat Pilot, Gunship, Jet* and *Battlehawks*. They may involve a lot of blue sky watching but what they all achieve is a superb combat atmosphere. You are up there alone and although nothing has much detail until it gets close, when it does it not only looks impressive – it looks dangerous.

Fractically

One branch of 3D that has so far been ignored in Amiga games is fractals. These mathematical fascinations can give surfaces a realistic texture unlike anything else – the nearer you get to an object the more detail is revealed about it. We are not talking jerky increases in sprite size here, it's the smooth revealing of greater detail, the same as zooming in on a Mandelbrot set but in real time.

Lucasfilm produced a series of fractal games on the 8-bit machines – *Rescue on Fractalus, The Eidolon* and *Koronis Rift* – but as yet these have not been converted to the Amiga. Perhaps somebody will dig the technique out again and apply it to games like *Virus* to produce even more interesting landscapes.

The future is as bright and promising for 3D environments as ever at the moment with the quest for greater reality or new worlds continuing apace. Here are just six of the imminent contenders in the field.

Dark Sentry: Flagged as the first game to use ray-traced graphics this could set the trend for the years to come. Ray-tracing eats up memory and time by the megabyte but programmers are getting better with the power at their disposal all the time and it's only a matter of course for ray-traced games to become standard.

Agressor, Bomber and Retaliator: The latest contenders in the flight simulator war are from Argonaut, Vektor Grafix and Ocean respectively. All three are stunning in the visuals department and only time will tell how they fare in terms of atmosphere and gameplay.

Damocles: This long awaited game is from Paul Woakes and you will find more about it on the Previews pages. With *Mercenary* he established a new genre of 'total environment' games – can he manage a similar feat with this latest epic?

Starblaze: Forget real environments, Logotron look like trying to go back to shoot-em-up entertainment for this. Will the amazing graphics flatter to deceive or is 3D going to stay firmly in the realm of the hardened blasters?

Drawing Circles

Tanks. That's right, tanks. There are at least five 3D tank warfare games on the way from Spectrum Holobyte, Empire, Realtime, Microprose and EA – there may even be more, so it looks like 1990 is the year of the tank. It seems we have come full circle from *Battlezone* – the more things change, the more they stay the same. Turrets at dawn: prepare for a shootout! ■



■ *Whirligig*



■ *Driller*



■ *Populous*



■ *Interceptor*



■ *Bomber*

INSECT LIFE

The *Sculpt-Animate* series of 3D modelling and rendering programs from Byte by Byte has been available in Britain for just 2 years and is now the most popular 3D system. It has one of the best working interfaces for a 3D program (a bit of bias creeping in here) and an excellent manual. With a bit of ingenuity anything from an insect's blink to the origin of the universe can be created using the power tools provided.

Creation

Nevertheless, just because it IS so powerful at simulating the real world, modelling and animating anything more complex than a bouncing ball is often a rather difficult task. How did God manage it in just six days? This next tutorial in our DIY series is therefore devoted to shedding some light (that's "Rt Amiga L" to you *Sculpt* users) in the more obscure depths of *Sculpt-Animate*.

The Third Dimension

All of the *Sculpt-Animate* (*SA*) series – *Sculpt3D, Animate3D, Sculpt3DXL, SculptAnimate4D Jr*, and *SculptAnimate4D Professional* – use an identical interface, the Tri-View, so whichever version you use the modelling steps used in this DIY session will make sense. Some of the tools on the menus have changed over time, however, so with early versions you may need to look for alternative methods for some of the transformations, and if you only have *Sculpt3D* the animation bit will be rather difficult, unfortunately!

Insect Life

The subject chosen for the tutorial is an imaginary insect. It started life as a sort of mechanical creature but soon pupated to a simple dragon-fly. The processes involved in bringing this creation to life can be divided broadly into two: modelling and animation. These will be described separately as far as possible but at times they overlap, which again may be a bit confusing if you only have *Sculpt*.

MODELLING

The first insect constructed, INSECT1, illustrates a common mistake, one I still make myself: too much complexity. Rendered in Snapshot mode with smoothing applied, it looks rather good: but with 1907 vertices, 4768 edges and 3154 faces it should do, and it took hours to render. The main advantage of using so many edges is that the outline curves all look smooth.

Although Phong smoothing will make the junctions of most surfaces blend together ▸



BRIAN LARKMAN starts 3D creation with a basic lifeform...

without a seam, it can do nothing for profiles. For round-looking objects, lots of edges need to be used, on the principle that a circle is made up of an infinite number of straight lines. Nevertheless, the limited resolution of the Amiga negates the effect of too many edges, increasing the count of vertices (and hence rendering time) without improving the image.

Less is More

The second insect (INSECT2, the main image on this page), is greatly simplified from the first (shown on the previous page), using 669 vertices, 1742 edges, and 1182 faces, yet the final render is barely less effective than the original. The difference is even less apparent when the fly is animated: movement seems to trick the eye so that imperfections are often disguised.

The model could probably have been simplified even further, by perhaps one third the number of vertices, without detracting from the animation. But the stills published here would look awful!

So Cut the Edges

What is immediately obvious is that the spherical segments are much more rounded in Insect1. Each sphere has 120 edges as compared to 48 edges for those in Insect2. The edge count for Insect2 should have been 30 but a few extra edges were added to improve the profile viewed from the side. The effectiveness of this trick is shown in the spheres inset.

Although the object obviously has a six-sided profile from this direction, in the final still the angles are disguised, and in the animation they are invisible. For a model such as this, with 15 spherical objects, a saving of over 1000 edges has been made.

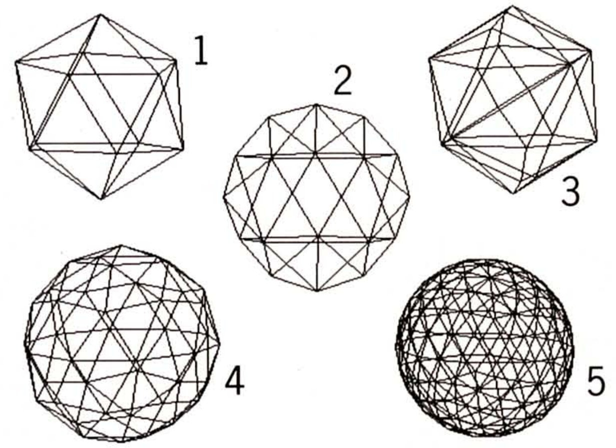
Other objects can also have a reduced number of sides without impairing the final image. It is rather difficult to make out but careful counting of the edges round the main central body segment shows that Insect1 has 10 and Insect2 just 6. Similarly each leg section has a 3- rather than 5-edged cross section.

Or Cut the Lot

Just as objects can have their complexity reduced if they are quite small, so also can they be left out altogether. Insect1 has eight feet each consisting of one sphere, one main section and six 'toes'. These are almost invisible in the final rendering, and completely lost in the animation. Chuck them. Other savings include: no antennae (too small to render), reduced number of body sections, and a simpler tail. The combination of all these reductions gives much quicker rendering.

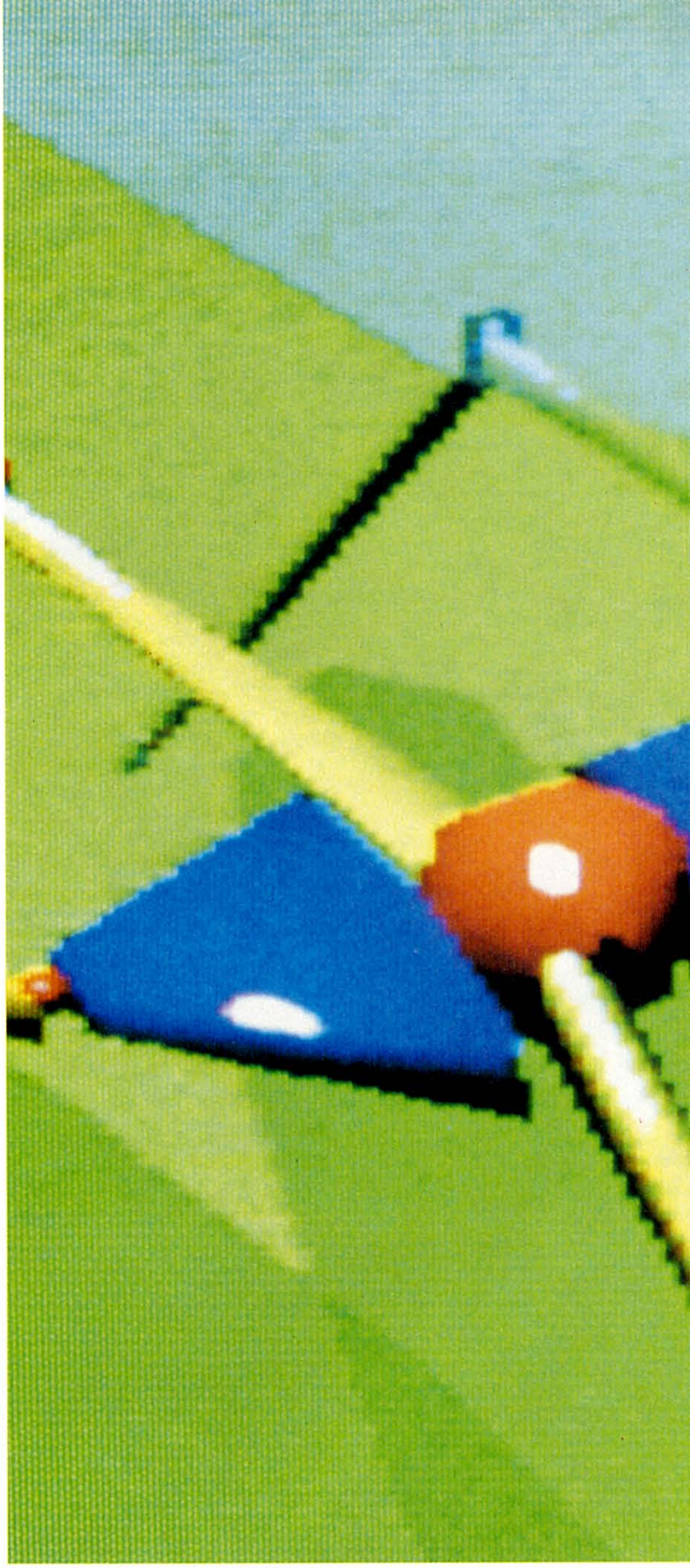
PHONG SMOOTHING

A number of similar algorithms exist to create the effect of smooth surfaces where flat facets join together. Phong smoothing calculates the degree of colour dithering neccessary to simulate light reflected from a smoothly curved rather than a faceted surface. To achieve this effect a large range of tones are required so smoothing is only really effective when used in the HAM rendering modes, Snapshot and Photo.



These five objects are all spheres created by *Sculpt*. [1] is the standard 20 face, 30 edge icosahedron with no subdivisions that is the basic 'sphere'. [4] is a single subdivision sphere with 120 edges and [5] is subdivided twice and has 480 edges. (Each time the edges are subdivided, four times the previous number of edges are created because only 3 sided faces are allowed so extra edges have to be created.)

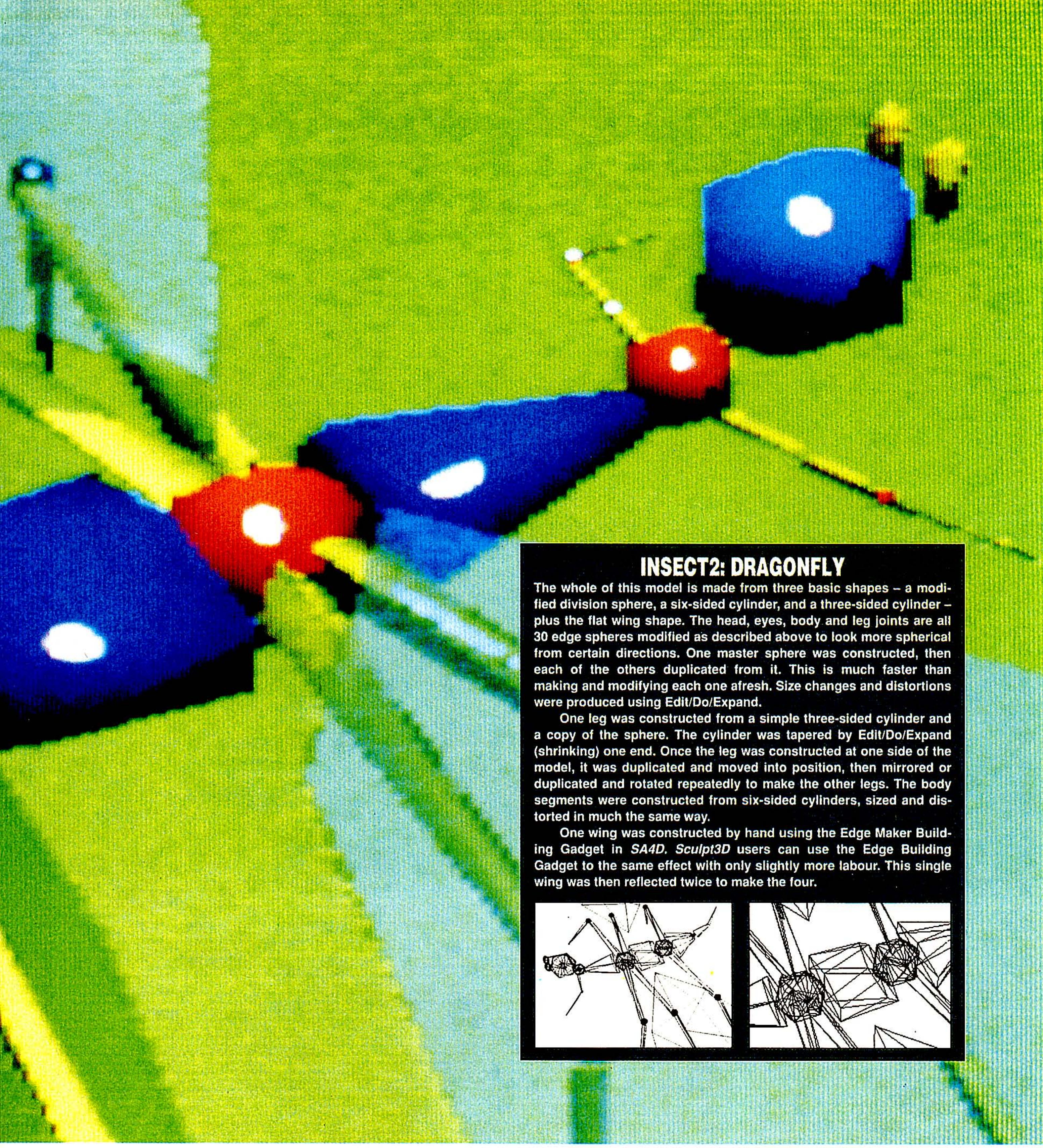
[2] is a standard undivided sphere with just the six 'profile' edges subdivided and 'snapped' to a sphere. (In *Sculpt 3D*, "BeSphere"). [3] is an exact copy of [2], rotated to show that the irregular nature of the object is only disguised from one direction.



THE SETTING

Once the objects have been assembled into something looking a bit like the creature you had in mind, with few enough sides to render quickly, it is time to select the position of the observer, the direction of view and the lighting. In many ways these are the most important aspect of 3D modelling, as they are in any visual artform – painting, photography, film-making or computer graphics.

The nature and mood of a scene is controlled by the way the viewer looks at it and by the disposition of light and shade. Viewed from far above and in full light, Insect1 looks like just another insignificant bug. Viewed from just below its head, looking up, with one light source throwing large areas of its body into shadow, the insect can look hideous and menacing. As director of this 'movie' it is up to



INSECT2: DRAGONFLY

The whole of this model is made from three basic shapes – a modified division sphere, a six-sided cylinder, and a three-sided cylinder – plus the flat wing shape. The head, eyes, body and leg joints are all 30 edge spheres modified as described above to look more spherical from certain directions. One master sphere was constructed, then each of the others duplicated from it. This is much faster than making and modifying each one afresh. Size changes and distortions were produced using Edit/Do/Expand.

One leg was constructed from a simple three-sided cylinder and a copy of the sphere. The cylinder was tapered by Edit/Do/Expand (shrinking) one end. Once the leg was constructed at one side of the model, it was duplicated and moved into position, then mirrored or duplicated and rotated repeatedly to make the other legs. The body segments were constructed from six-sided cylinders, sized and distorted in much the same way.

One wing was constructed by hand using the Edge Maker Building Gadget in *SA4D. Sculpt3D* users can use the Edge Building Gadget to the same effect with only slightly more labour. This single wing was then reflected twice to make the four.

you to control these factors to create the effect that you want.

Points of View

The point in the scene that you are looking at is set by the Target. This should be positioned, to start with, in the centre of the scene. The observer will be looking directly at this target from their Location.

Depending on the subject, the Location should be placed at a suitable distance and slightly above the level of the Target point if you want to dominate the scene, and slightly below it if you want the scene to dominate you, the viewer. The most important object in the scene should be close to the centre of the frame or 'looking' towards the open space and action if it is off-centre.

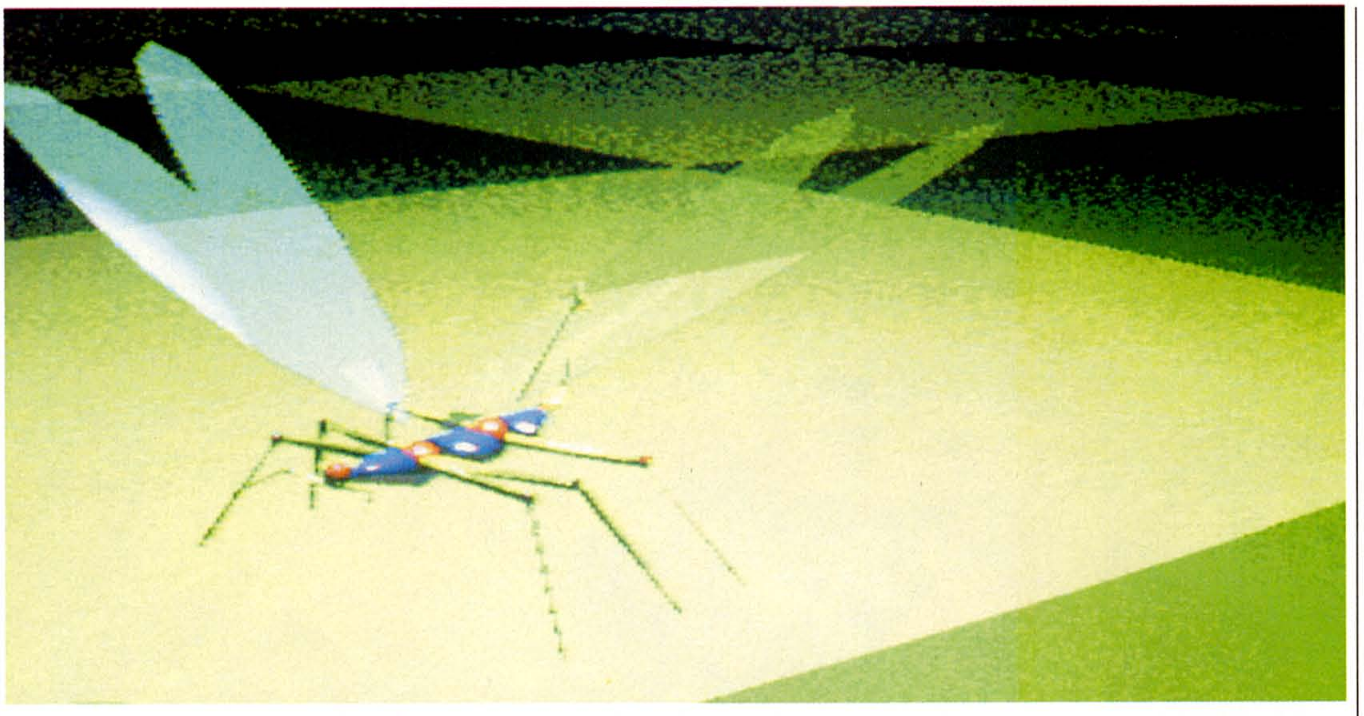
Lighting

The fewer lights used the better is a reasonable rule of thumb because more lights means longer rendering time. For natural-looking lighting, position one light source midway between the Target and Location, but about five times as high as the distance between them. A second source, much lower and off to one side, can provide fill-in and make the shadows more interesting and realistic. An extra light some way into the distance casting a pool of light onto the ground gives a feeling of depth and realism. Three lights should almost always be more than enough.

Costs Time and Money

If you are animating the scene, movement of Target, Location and Light sources can add a far greater impression of 3D reality but at a cost. As the angle of view or level of lighting changes, virtually every pixel is likely to change from one frame to the next.

Delta Compression operates by recording the changes from frame to frame, so if every pixel changes, no compression can take place and the size and speed of the animation suffer greatly. Recording to a single frame video recorder overcomes this, but you might resent the limp: it costs an arm and a leg! The only real solution for a budget system is to keep Target, Location and Lighting static and move everything else. ▶



ANIMATION

Building the objects and the scene can be difficult enough, but animating them can be a nightmare unless some simple rules are obeyed:

1 For your first few animations choose simple objects and simple motions. Simple objects mean quick rendering so the errors will show up quickly without waiting 36 or 48 hours for a perfect photo-realistic animation of an insect's wings flapping beautifully six feet ahead of its body.

If you know exactly what you want to happen, make a very simple model of it – cube for body, single triangular face for wing – and experiment. Examine the example scenes and naming hierarchies on the *SA* data disk. Use the Show Path and Select Named Path requestors to show how things were done in the examples.

2 Don't try to visualise the total motion of an object if it is a part of something else that is also in motion. For example, if your legs are swinging back and forth as you walk along the corridor of a train travelling across the face of the earth spining on its axis and rotating round the sun which is spiralling out from the centre of the milky way galaxy, what is your actual motion through space? Who cares?

You need only consider each object and its own motion relative to its centre of gravity or local origin, then attach it to the next level up the hierarchy. The legs swing, the body moves forward, the train curves along its track round the earth... the universe expands.

3 Just as fine detail in a model is often wasted in an animation, complex, detailed motion is usually lost in a 20-frame, one-second loop. The objects are moving too fast, so don't try to articulate every joint of the insect, every fluttering leaf. Rather, choose a simple gesture to add realism: cocking the head to one side momentarily, raising eyebrows, twitching a tail.

A more detailed tutorial on animation will be provided in a future *Amiga Doormat,* covering Global and Key Frame motion, hierarchies and motion within motion. The animation of the dragon-fly – which may, or may not be on the current Coverdisk – is pure Global. Nevertheless it includes a useful method for making an object rotate around one end, which is good for such things as wings, windscreen-wipers and the pages of books.

Taking Wing

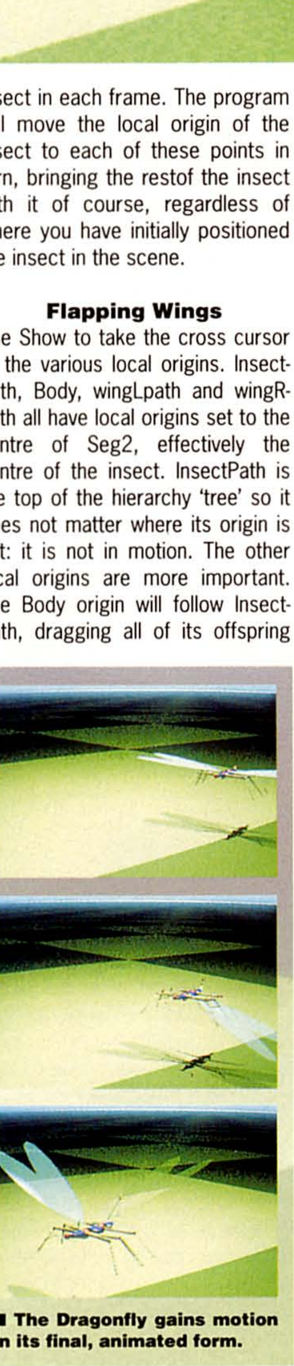
Even if the ANIM file 'INSECT' is not on the disk, the global scene file should be: so load and examine that, especially the naming hierarchy. The animation is in two parts: the flapping of the wings and the forward motion of the insect. The simplest part is the forward motion.

Use Modify/Local Origin to examine the hierarchy. The parent is InsectPath, a 25-point straight line that is the forward motion path. Each point on this line represents an anchor position for the insect in each frame. The program will move the local origin of the insect to each of these points in turn, bringing the restof the insect with it of course, regardless of where you have initially positioned the insect in the scene.

Flapping Wings

Use Show to take the cross cursor to the various local origins. InsectPath, Body, wingLpath and wingRpath all have local origins set to the centre of Seg2, effectively the centre of the insect. InsectPath is the top of the hierarchy 'tree' so it does not matter where its origin is set: it is not in motion. The other local origins are more important. The Body origin will follow InsectPath, dragging all of its offspring with it like ducklings following mum. The two wingpaths, L(eft) and R(ight) will also follow, but they are a special case. As paths in their own right, they control the independent motion of the left and right wings, their offspring, ducklings with ducklings of their own. The actual motion of the wings is a rotation of about 60 degrees around their own local origin.

To see this different origin it is neccessary to zoom in until only seg2 and the base of the wings fills the window. Use Modify/Local Origin/Show to move the cursor to the wing and wingpath origins. Each wingpath is a six-point circle, squashed horizontally so that the wings move up and down rather than in circles.



■ The Dragonfly gains motion in its final, animated form.

The Difficult Bit

The flapping motion is provided by modifying the tumble axis at each point on the wingpath. The use of the Tumble Axes Modifier is really beyond the scope of this tutorial and is described in detail in the various manuals. It takes a fair bit of practice to master but it is a vital skill if you want the motion of your objects to look realistic.

Try using very simple mock-ups of your object to try out the various possibilities as suggested in Rule 1 above. It CAN be mastered, but it must be said that this is the most difficult aspect of all the Sculpt-Animate system and could do with being made easier to use and understand.

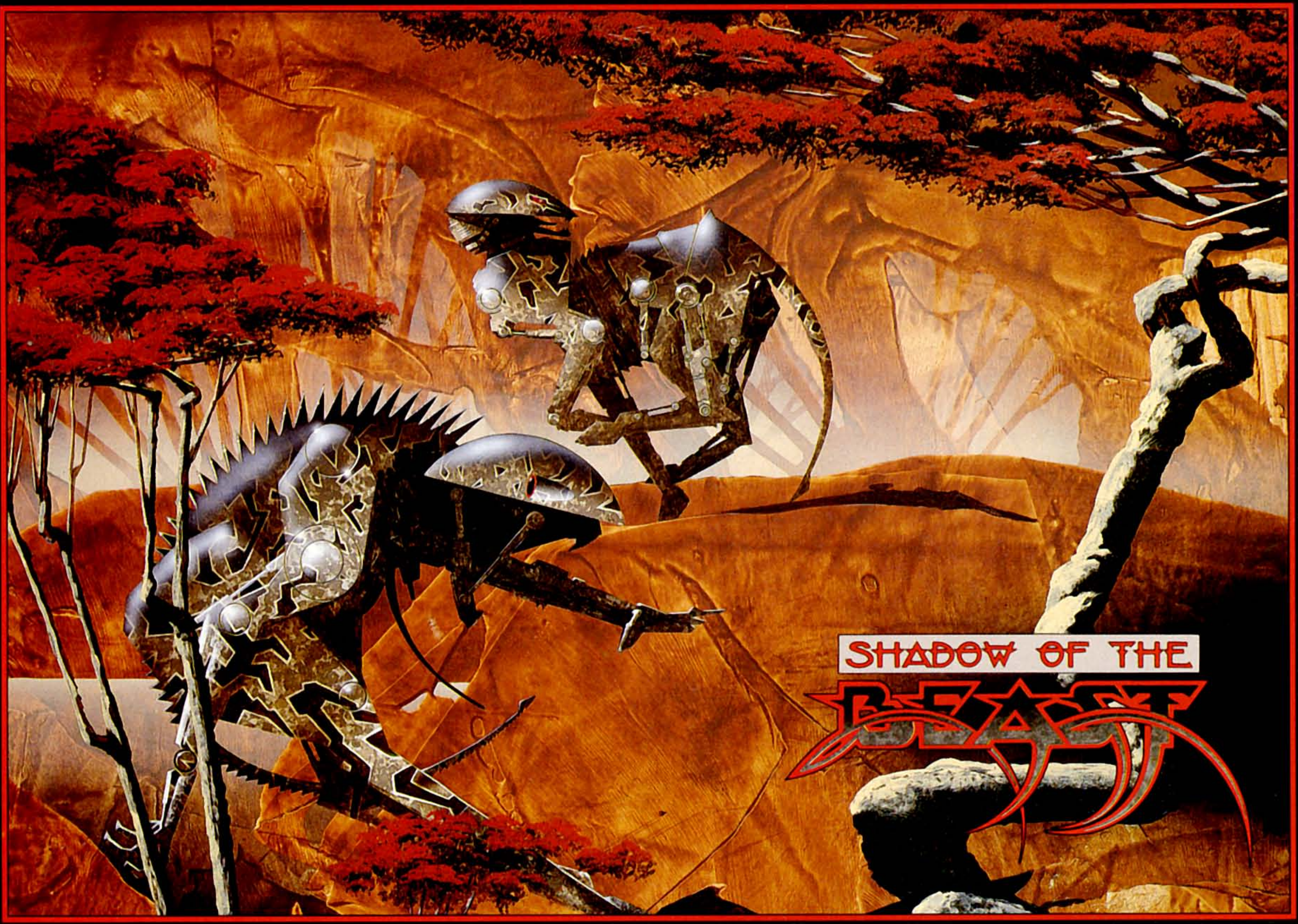
Well, that is quite enough to be getting on with. In a few months' time expect the animation tutorial mentioned above: next month it's Back to Art School with *Deluxe Paint.* ■

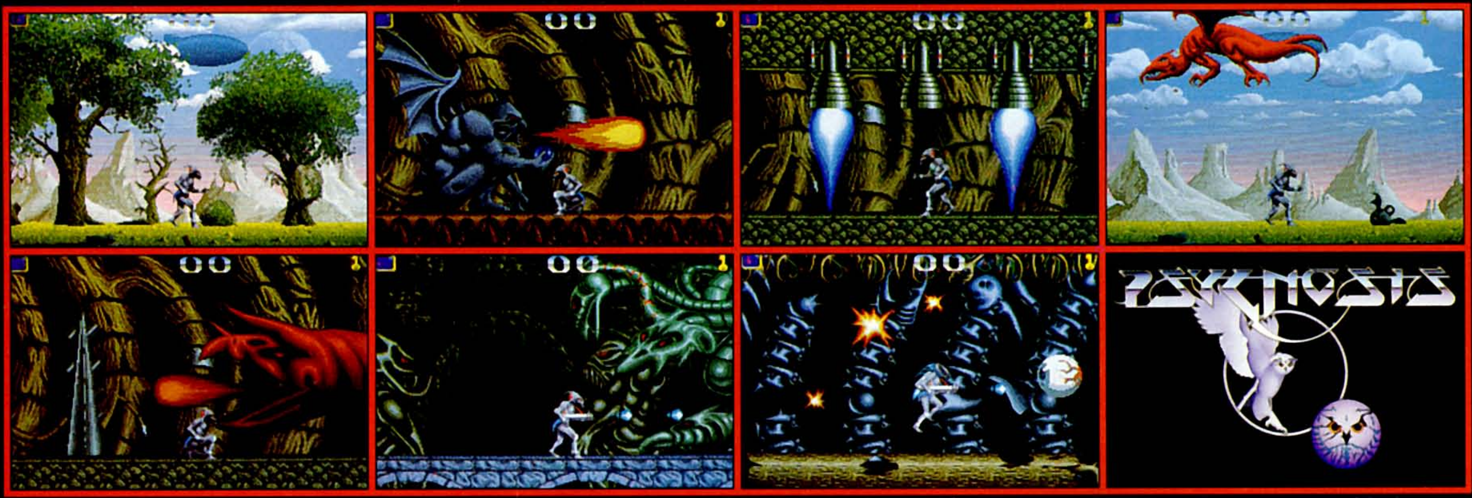


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SCREEN PLAY

Licences are the theme of this month's screenplay: whether they're film translations or coin-op conversions, they're coming through thick and fast. There's only one way to tell if the game you've been waiting ages for has been worth the wait, and that's to turn the page and read the definitive review. There's plenty more than just licenced games in here though, so take a deep breath and indulge yourself as you wander through the next seventeen fun-filled and action-packed pages.

BATMAN
THE DARK KNIGHT

BATMAN

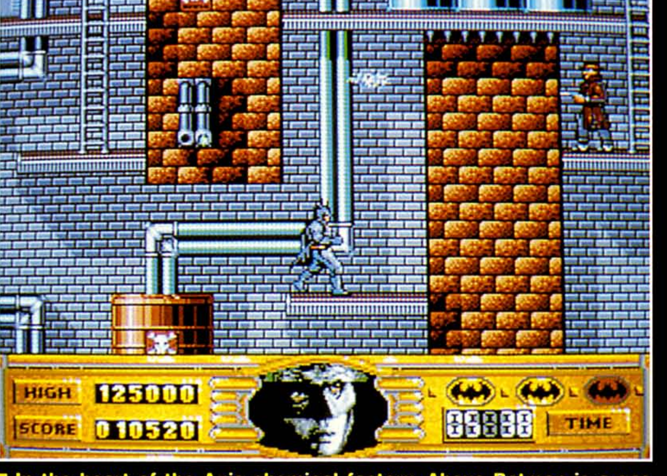
AMIGA FORMAT GOLD

OCEAN £24.99 ■ Joystick or Keyboard

The Dark Knight has returned. The success of Frank Miller's groundbreaking graphic novel has revitalised a hero presumed extinct. Further novels, repeats of the TV series and a new film have followed. Now there's the game of the film, pitting Batman against the Joker in what can only be called a cataclysmic confrontation.

The battle takes place over five sections, related to scenes in the film. Curtain up on the Axis chemical factory which is being attacked by Jack Napier and his cronies. Batman has to find his way through the plant to Jack and deposit him into the acid vat that turns him into the Joker.

The factory is depicted by a 2D, multi-directional scrolling system of rooms and platforms. The place is absolutely crawling with Napier's henchmen. They patrol the platforms attacking the Bat with guns and grenades. There are also acid and gas leaks which can deplete energy if run into. The trusty Batarang can protect you from the henchpersons, while the Batrope is used to climb up to platforms above.



■ **In the heart of the Axis chemical factory. Above Batman is a gas leak, to the left an acid drop is appearing from a pipe: avoid both.**

The first section is tough, but a bit of perseverance reveals the route to Jack and the exit to the next section. The real art becomes getting through it without losing one of the three lives.

Section Two is on the streets of Gotham City in the Batmobile. It's a race back to the Batcave before time runs out or the car conks out. As you thunder through the streets the traffic blocks the way and damages the car when it hits them. Roadside objects should also be avoided. A direction arrow points the way home, indicating when the Batmobile needs to take a turn. The only way to turn is to shoot a grapnel round a lamp-post and slingshot round it. However, if you miss three turn-offs you run straight into a roadblock: and that's the end of your life I'm afraid, Batperson.



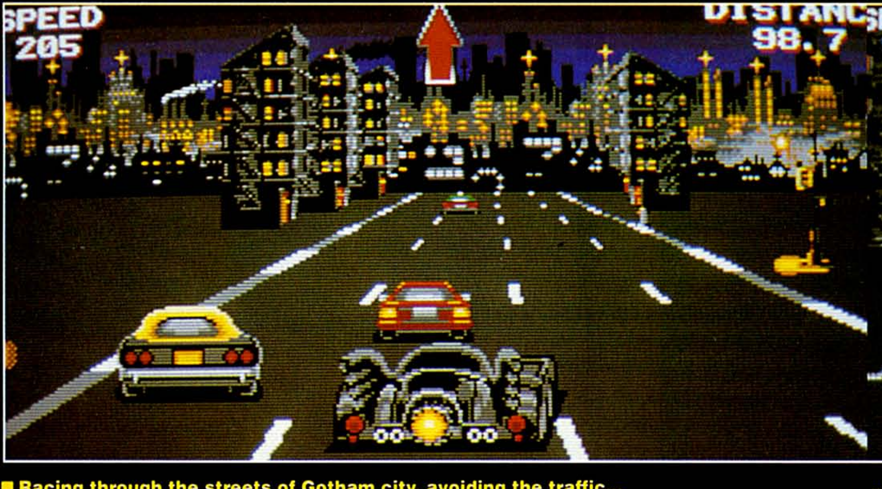
■ **Still in the factory, a henchman called Bob lobs a hand grenade.**

Back in the Batcave, the Joker's Smilex poison has to be isolated by mixing three objects. There are eight objects to choose from and a limited time to mix them. It's solved just like the old game Mastermind: select three objects and you are told how many are correct, but not which ones.

Section Four is back to the streets of Gotham, this time in the



■ **The rope is the only way to get around sometimes – it's fun too.**



■ **Racing through the streets of Gotham city, avoiding the traffic...**



...making a left turn by swinging round on a lamp-post...



■ **Flying the Batwing in the fourth stage. The balloons have to be released by flying through the ropes. Hitting the balloons or the bases results in damage to the plane, as does hitting the buildings.**



■ **Whoops! The Batwing banks up and explodes a balloon.**



■ **Sustain too much damage to the Batwing and it explodes.**

Batwing. It's carnival time now and the Joker has lined the streets with deadly gas balloons. They are floating from cakes and all Batty boy has to do is fly through the ropes to release the balloons into the air. Hitting the balloons, cakes or roadside obstacles damages the Batwing and going too slowly introduces the risk of running out of time in which to reach home.

If you can survive all that, the final section is set in Gotham cathedral. It's similar to the first section in the factory, with henchmen attacking. There are additional hazards like crumbling floors to complicate the task even more.

At the top of the cathedral the Joker awaits. Defeat him here or he will escape in a helicopter and you will have to do the whole game over again: won't you?

GRAPHICS AND SOUND

The 2D sections are competent in terms of graphics – functional rather than stunning. The street scenes are another matter. Whizzing along Gotham's darkened streets is much better to look at and extremely Batmospheric. The rolling road and all the objects are fast and well drawn: a definite touch of class. Watch out for those 90 degree turns. Smashing.

JUDGEMENT

The five sections hang together well as a game. Each one is tricky and takes some mastering. It's unfortunate that if all lives are lost you have to restart from the chemical factory, but that certainly proves a challenge. It's edge of the seat excitement that grips you solidly. It's addictive, certainly, and though it's also frustrating at times and you could tire of it after a while, Batfans will not be disappointed. ***Batbob Wade***



■ **Taking to the ropes during the final stage in the cathedral.**



■ **A nasty surprise awaits in the cathedral – rats on the loose.**

GRAPHICS	8
SOUND	7
INTELLECT	3
ADDICTION	8
OVERALL	**90%**



...and making another left turn, only just in time to avoid the police roadblock ahead.

THE RATINGS EXPLAINED

GRAPHICS
Good graphics are an important part of any game: if the power is there, it should be used to the full. Both static and moving graphics come under scrutiny in this rating, but remember, graphic wonders alone do not a great game make...

SOUND
With stereo capabilities the last thing you want to hear are Spectrumesque beeps, right? Title tunes and effects all add atmosphere to a game and good sound can greatly increase your enjoyment.

INTELLECT
How much real thought do you have to put in to play the game? Just because a game's mindless doesn't necessarily mean it's bad, but a game with a high Intellect rating says immediately you'll need to think to gain maximum enjoyment.

ADDICTION
How easy is a game to pick up and play? How much sheer fun will you get from it? Will you keep coming back? Important questions, all answered by a look at the Addiction rating.

OVERALL
A percentage mark that takes into account all the ratings, plus extras like lasting interest, packaging, documentation...

THE TEAM
Andy Smith, was with *ACE* right from Issue One. He wouldn't know an op-code from a hole in the ground, but that's small comfort to the hundreds of games he has mastered. He loves any type of game, be it a shoot-em-up, strategy game, arcade adventure... *Bob Wade* started reviewing with *Personal Computer Games* and has worked for *Zzap!64, Amstrad Action* and *ACE*. There's no-one in the business with a better idea of what makes a great game... *Pat McDonald* has been Technical Editor on our sister magazine *Amstrad Action* for years now and an Amiga owner for nearly as long. On the pixel battlefield or during a rollocking bit of roleplaying, Pat is a major force to be reckoned with. ■

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■ **On the archery range. Step up at least two levels here to impress your guild master.**

HILLSFAR

SSI £24.99 ■ Joystick or Keyboard

There's no RPG system more famous than the AD&D one and SSI have spent the last couple of years trying to capture if not the whole system, then at least the feel of it, on computer. *Heroes of the Lance* was the first to appear and turned out to be more of an arcade adventure than anything else, then *Pool of Radiance* came out and was much more like the original system. And now *Hillsfar,* the second in the series to appear on the Amiga.

The game takes its name from the town around which the game is set and basically it's a mix of two different game styles: adventuring and arcade action.

The arcade side of things plays a less important role in the game and include such things as combat in the arena against various enemies like lizard men and minotaurs, riding your horse from one location to another, improving your aim on the archery range and running around searching for treasure and other goodies in the various mazes that appear to be in almost every house.

If you're more interested in the adventuring then you'll find yourself wandering around trying to complete various quests. Of course before you start you'll have to create a character, deciding what race he/she should be (human, elf, dwarf and so on), then the person's occupation (fighter, thief, cleric and so on). Once you've done all that, it's down you to decide just what to do – visiting the guild hall of your chosen occupation is always a good place to start – but whatever you decide to do it's largely up to you just how you go about it. Whatever path you take, though, it won't be long before you have to have a go at both sorts of game.



■ **In the town of Hillsfar. The yellow arrow represents your position within the town (at the moment you are outside the fighter's guild).**

GRAPHICS AND SOUND

The screen is split into three for the most part, the major portion being taken up with a plan view of the town with a small window to the left showing the town through your eyes. The remaining window is reserved for cameos of the various people you'll come across and text messages. Overall the graphics are less than impressive, but they serve their purpose well enough. Sound, as well, is disappointing but it doesn't impair your enjoyment of the game.

JUDGEMENT

It's always difficult to produce a good game that's a distinct mix of two very different styles without upsetting the purists. SSI have tried very hard – and succeeded – at doing just that. For arcade fans who fancy a bash at something else in between the action events and for adventurers who fancy a slice of the action then this is just the sort of thing. ***Andy Smith***



■ **Mazes are lurking within most buildings and all of them contain interesting treasure chests.**

GRAPHICS	6
SOUND	4
INTELLECT	5
ADDICTION	7
OVERALL	**72%**

Forget the Ferraris and the Porsches: what you really want is a little buggy to sit in. Give it plenty of poke in the shape of a rear-mounted engine with a top speed of 244kmh and don't bother with namby-pamby seat belts and roll cages and you're away.

Welcome to *Powerdrift*, Activision's conversion of the popular Sega coin-op. As if you hadn't already guessed, it's a driving game! There are a few subtle differences between *Powerdrift* and other racing coin-op conversions, not least the absence of a time limit. None of this rushing to reach the next checkpoint as the seconds tick away. That doesn't mean you can just take your own sweet time though: it's still a race.



■ **The end of a race and yours truly qualifying in First Place.**

Twelve competitors take part in each race, but you start in fourth position. Quite simply, the idea is to finish each race in one of the top three places to qualify for the next stage. Each race is four laps of the track and there are five tracks to each course, with five courses to choose from.

The tracks tend to increase in difficulty as you progress. For example, the first couple of tracks will tend to have fewer and gentler bends while the later tracks will become much more difficult to negotiate and quite a challenge.



■ **The second leg of the course, and this time it's at night. Fortunately those tyres keep you from falling off of the track!**

As well as bends there are other hazards, including suspended log tracks with no barriers on either side, so it's very easy to get the

ACTIVISION £24.99 ■ Mouse, Joystick or Keyboard

POWERDRIFT

FORMAT AMIGA GOLD



■ **How can we tell if *Powerdrift* has the right 'feel' if we don't go and try the things out for real? Intrepid (and handsome) reporter Andy 'Outta the way!' Smith gets to grips with a Honda 350cc Odyssey.**



■ Finishing first again at the end of a tough leg on a snow-covered course. One more leg to go and the course will be completed.



■ The hydraulic coin-op machine – the cabinet certainly adds something to the game, but Activision have done a great job in catching the essential gameplay, which is far more important.



line seriously wrong on a bend and go plummeting into space. Then there are the jumps that can only be cleared if you're travelling over a certain speed.

Last but not least, there are the other racers, colliding with any of whom causes you to go into a spin. Not much time is lost as you're almost immediately back in the race, but your speed suffers and it takes a couple of seconds to get back up with the pack.

Fail to qualify and you can use one of your five continue credits to have another bash. Incidentally, and rather entertainingly, if you come in first for all five races you may get the chance to drive the motorbike from *Super Hang-On* or fly an F14 from *Afterburner* round a bonus track.



■ Powering over a jump – the speed's well up so making it to the other side is no sweat!

GRAPHICS AND SOUND

Very fast and very colourful: it's so fast, in fact, that it sometimes gets a little confusing as to where you're supposed to be going. But after a couple of laps of each course, you'll know them well enough. The jingles are standard coin-op fare, and the sound effects are fine for the job required.

JUDGEMENT

Wonderful stuff. As challenging and as addictive as you'd expect from a hit coin-op but with much more gameplay depth than usual. A first-class racing game with all the essential ingredients to keep you in the driving seat.

Andy Smith



GRAPHICS	9
SOUND	6
INTELLECT	3
ADDICTION	8
OVERALL 92%	

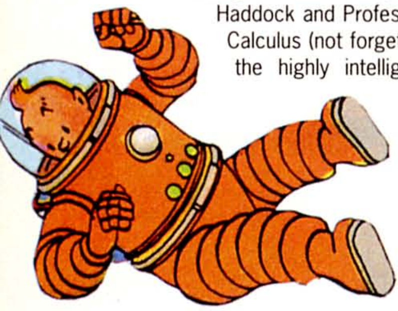


■ On a suspended log course. Make the most of the barriers – they're not there for the whole track so staying straight gets very tricky!

INFOGRAMES £24.99 ■ Joystick

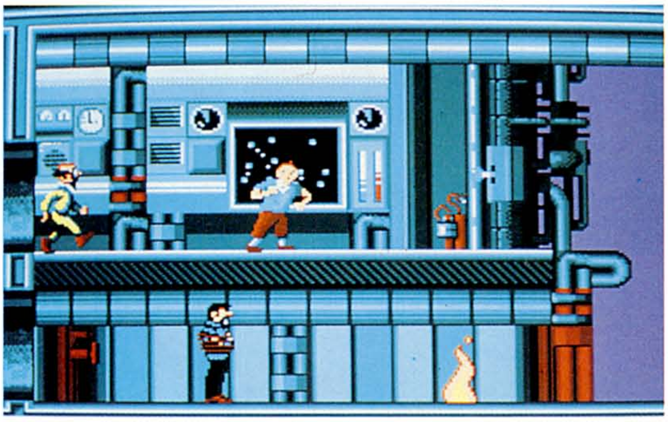
TINTIN ON THE MOON

Tintin On The Moon is based on 'Destination Moon' and 'Explorers On The Moon', two of the kiss-curled reporter's adventures (did you know that Tintin has failed ever to file a report to the newspaper he works for since the first story?), in which the young chap along with Captain Haddock and Professor Calculus (not forgeting the highly intelligent dog Snowy) are piloting the first manned rocket to the moon.



The game consists of three major parts over six stages. The first part involves the player piloting the rocket – viewed from directly behind – through space, collecting yellow fuel pods and other red pods which, once you've collected enough, advance you through to the first of the game's six stages. Once you make it to the first stage you're into the second part of the game which sees you controlling Tintin as he rushes around the inside of the ship finding and de-fusing time bombs that have been planted by the evil Colonel Boris.

The number of bombs that need collecting increases during the game – one for stage one, two for stage two and so on – and the amount of time you have to collect the bombs depends on how many fuel pods you picked up in the previous section. Why does it depend on the number of pods? Because the evil Colonel has also decided to light several fires on board which eat up the fuel (well, anything's possible in cartoon books!), so you also have to rush about extinguishing any fires you come across – once you've found an extinguisher. Find the bombs, put out the fires and release Calculus and Haddock if they happen to get tied up by Boris who's also running about and then it's back to piloting the ship through to the next stage.

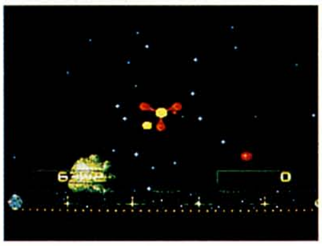


■ Tintin inside the space rocket. This is the end of the first stage so there is only one bomb to find – and it looks like Tintin has found it.

Make it to the sixth stage and the third part of the game has you trying to land the rocket on the surface of the moon to complete the whole game.

GRAPHICS AND SOUND

The opening sequence is terrific and the sprites and backgrounds are jolly well drawn. The animation is a bit iffy though and the sound effects are not the world's greatest. The screen shots show how good the still graphics are, but they're not necessarily so hot once they're moving.

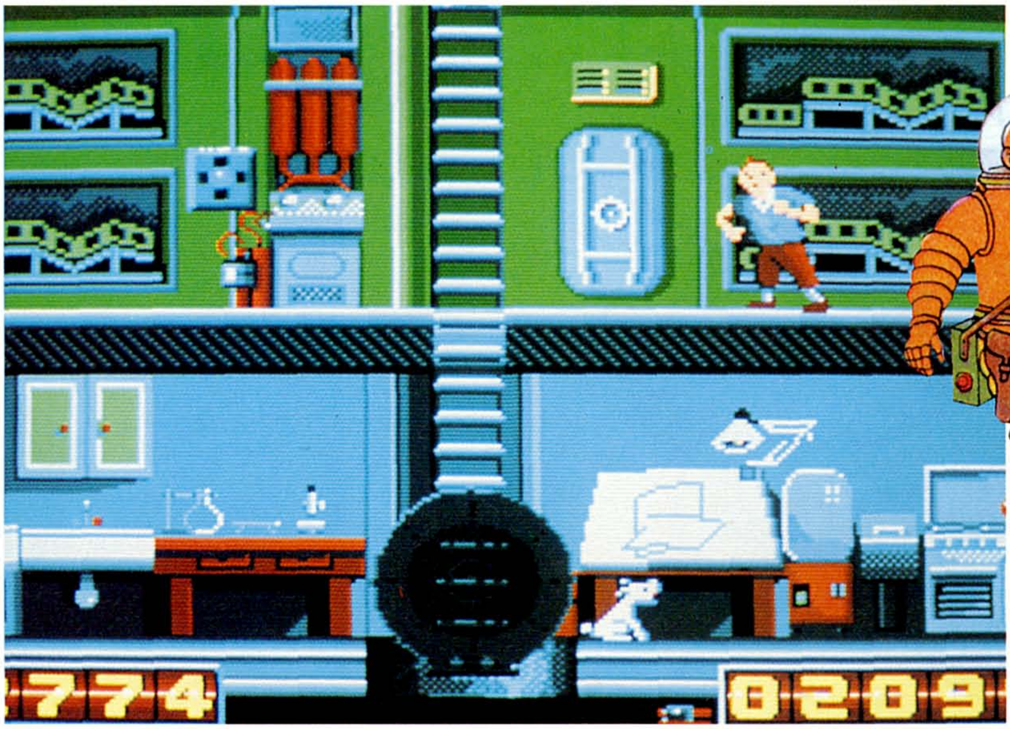


■ Collect the yellow fuel and the red 'advance' pods as you fly.

JUDGEMENT

Despite the fact that the game's literally been years in development, it's turned out a disappointment. The gameplay is far too simplistic and shallow to give any satisfaction and after just a short time it becomes very repetitive. Add to this the fact that it's easy to lose your one and only life, at which point you have to re-start the whole process, and you're left with a game that's more a wasted than a fulfilled opportunity.

Andy Smith



■ The second level and Tintin has found the second bomb. All he has to do now is put out all the fires and untie Professor Calculus. Then it's back to the flying through space part of the game for Stage Three.



GRAPHICS	7
SOUND	5
INTELLECT	2
ADDICTION	5
OVERALL	**83%**


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CABAL
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LANCASTER

ACTUAL SCREENSHOTS
£24.95 ■ Mouse only

Here's the World War II flying ace donning his scarf, helmet and goggles ready for another daring raid deep into enemy territory. His Lancaster bomber takes to the skies and faces the might of Nazi air power as it tries to complete progressively harder missions. Or, to put it another way, let's go hammer the Hun with a trusty machine gun and a bay full of bombs.

This is not a full-blown flight simulator: it's an action game in which you play the part of the rear gunner. There are three guys to choose as the character you play, each with different experience in terms of missions flown.

The start of each mission reveals a map of Southern England and North Western Europe. Somewhere in Europe will be a big cross marking the target for the bombing run. Then the plane takes off in an impressive 3D sequence, during which you can't actually do anything at all.

Once the plane is in the air the screen switches to a zoomed in view of the map, where the plane is represented by a roundel which is guided in the direction you want to go, operating in accelerated time to save boredom. Guide it to the target until it makes its final approach run or gets intercepted by enemy aircraft, at which point view switches to the rear gunner.

Using the sight he has to defend the plane against the attacking dangers of fighters, flak, barrage balloons and searchlights, some of which can be turned off on the initial status screen.



■ A fighter banks away after raking the plane with machine-gun fire.

There is a limitless supply of ammo but every time the plane gets hit by the enemy it loses speed and height. If these get too low the aircraft plunges to the ground, leaving the parachutes of the surviving crew drifting behind.

If the plane reaches the target the view changes again to the bomb aimer. As the buildings, tanks, bridges or whatever else is below pass by, you have to drop the bombs onto them. Once the last one is gone it's back to the map screen for the flight home and possibly more interceptions on the way. As the missions are completed the targets get further away and the interruptions by enemy forces increase.



■ The mission map show the plane's position with an RAF roundel.

GRAPHICS AND SOUND

The 3D objects are very impressive: plenty of detail and quite fast moving. The rest of the graphics are crude: poorly-drawn map screens and characters. The sound is not too thrilling either, consisting mostly of competent engine noises and machine gun rattles. The bomb noise is particularly whiney, but there is some entertaining speech during and after the missions.


■ Tally-ho! One Hun is downed.

JUDGEMENT

It's good as far as it goes. The 3D sequence is promising, as is the multiple mission scenario. However, what lets it down is the fact that there just is not enough variety in the action. It's just a matter of blasting down plane after plane and bombing the same old things. It really does need that bit more depth in order to keep you interested for long. ***Bob Wade***

GRAPHICS	7
SOUND	6
INTELLECT	3
ADDICTION	5
OVERALL	**61%**

SLAYER

HEWSON £19.99 ■ Joystick only

Horizontally-scrolling shoot-em-ups come and go by the dozen. Nobody, it seems, ever grows tired of them. So we are probably guaranteed the continued appearance of games like this: perfectly well programmed, offering a reasonable challenge and nothing new in the gameplay department.

If you are familiar with *R-Type* and *Zynaps* then this should hold no surprises. The screen is bordered by scenery that proves fatal when collided with. Attached to it are gun emplacements at regular intervals, blasting bubbly death and laser bolts.

On the route are power-ups that give extra weapons like drones or diagonal firing, or act as smart bombs when touched. Equally unsurprising are the flying aliens and end-of-level guardians that try to destroy you.

It's difficult and, like most shoot-em-ups, addictive, but there's nothing here to get excited about. ***Bob Wade***

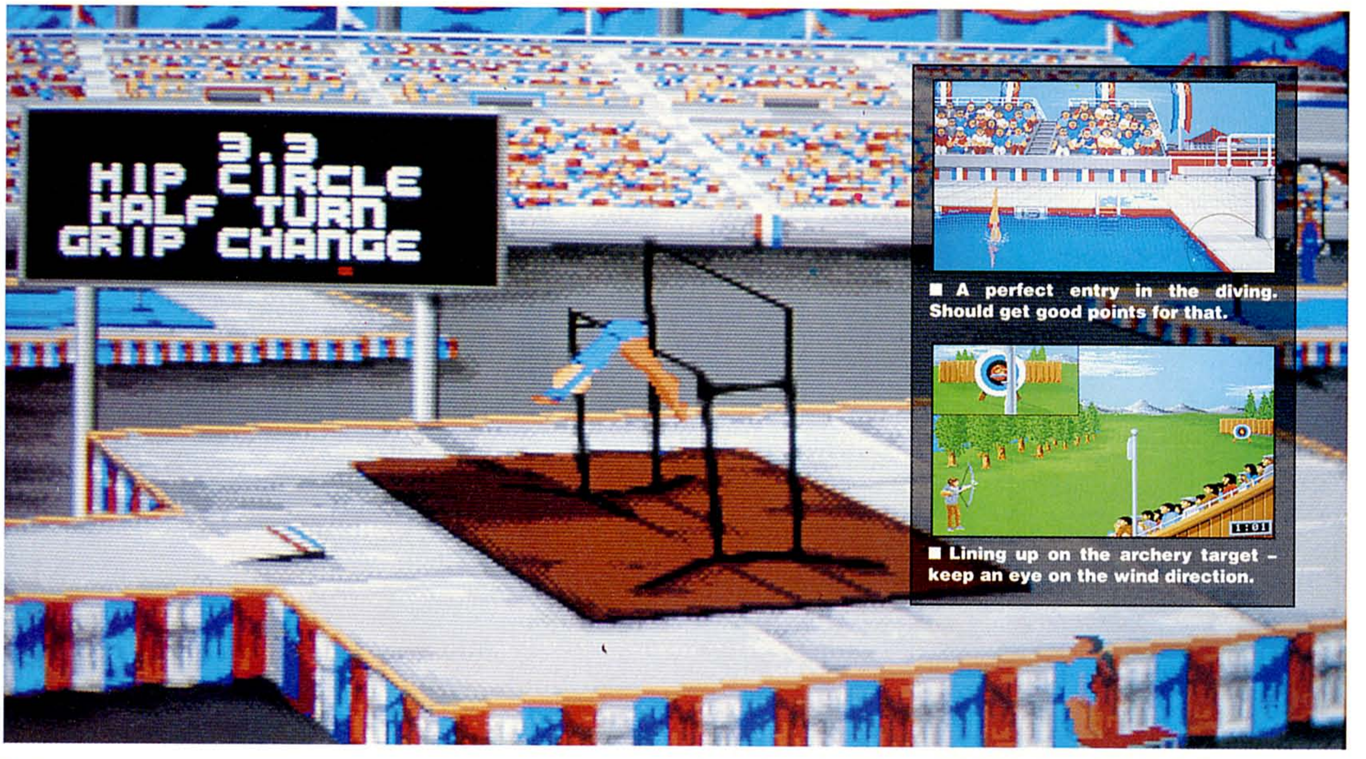

■ The scenery is reminiscent of *Zynaps*, as you can see from these two poictures, and gameplay is much the same as well.



GRAPHICS 5 / SOUND 4 / INTELLECT 1 / ADDICTION 6 / OVERALL 43%

THE GAMES SUMMER EDITION

EPYX/US GOLD £24.99 ■ Joystick or Keyboard



■ A perfect entry in the diving. Should get good points for that.

■ Lining up on the archery target – keep an eye on the wind direction.

Epyx the company recently closed down in the States, but Epyx the software label lives on. This latest Epyx sporting extravaganza takes eight events from the Summer Olympics, and from several different types of sport.

From athletics there are the hammer throw, pole vault and 400 metre hurdles. From gymnastics there are the parallel bars and the rings. Making up the eight are archery, cycling and diving.

The events are set in Seoul, scene of the '88 Olympics, and even though this is a bit out of date, the scene is beautifully presented. There is the usual attention to detail from Epyx: world records in each event, and two player options (simultaneous for cycling and hurdling). The events can be practiced individually or put together into a competitive event comprising one or all.

The most complicated events are the two gymnastic disciplines and the diving. These involve many different manoeuvres rewarded by points scores. This skill element makes these the most difficult events to master. In the rings and parallel bars sequences of moves have to be put together, trying to attain as much difficulty and as little repetition as possible. The diving has as many different moves, but obviously you can only select and perform one type of dive at a time.

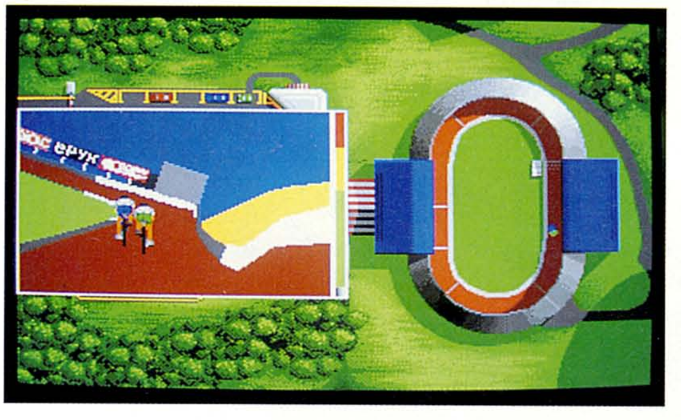
None of the events are out-and-out wagglers but the cycling and hurdles need the most. The cycling takes place around the banked turns of the velodrome against another rider. The riders dawdle around three laps, conserving their energy, and then burn it up on the last lap. You can also slipstream behind the other cyclist in the race to save energy.

The hurdles involve little more than just waggling, punctuated by whacking the fire button to clear the hurdles. The timing is important because getting it wrong results in a fall and being out of the race. The pole vault also involves some waggling but it has to be in rhythm to build up speed. Then it's a matter of timing joystick moves to plant the pole and swing your body over the bar.

The hammer throw can provide one of the game's highlights but only when you make a mistake. Mistime the throw and the hammer comes hurtling towards the screen, shattering it spectacularly. The hammer speed is built up by anti-clockwise cycling of the joystick – a bit tough on keyboard players if there are any.

No surprises in the archery, it's just a matter of aiming at the target and allowing for the wind level (indicated by a windsock). There are only six arrows to shoot, but they do have to be loosed off within the time limit.

■ Pedalling hard around the banked curves of the velodrome. Make quite sure that you save energy for the last lap and sprint to the line.



GRAPHICS AND SOUND

An excellent job has been made of the graphic presentation in all the events. The character animation is smooth and the scrolling for track events like the cycling and hurdles is also slick. There are lots of pleasant musical accompaniments to the events but not much in the way of sound effects.

JUDGEMENT

There is little left to be said about Epyx's sport simulations: they are always competent and enjoyable. This one has been well programmed, delightfully presented and has some excellent highlights. It's not going to get too many pulses racing though, because there is not much new about it.

Bob Wade

GRAPHICS	7
SOUND	7
INTELLECT	4
ADDICTION	5
OVERALL 61%	



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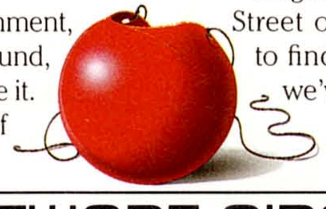
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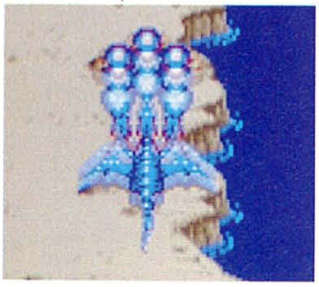




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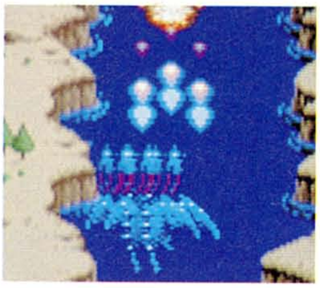
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DRAGON SPIRIT



■ **Three heads breathing fire make you a force to be reckoned with.**

Serpent demons are nasty pieces of work and the one called Zawell is the worst of the lot. Aside from other generally horrid things, he's kidnapped the Princess Alicia and is holding her hostage.

Enter your good self, magically transformed into a dragon complete with fiery breath, to rescue the poor maiden in this conversion of the Atari coin-op. There are eight stages to this vertically-scrolling shoot-em-up and nine end-of-level guardians to fight.

The action is all viewed from directly above as you fly over the lands destroying all the flying, crawling and swimming creatures that Zawell sends against you. Fortunately, you're well stocked up on bombs so destroying the ground targets is not too much of a problem. The flying creatures are quite easily taken out too using your fiery breath, especially if you can collect the power ups which appear when you destroy the blue eggs which occasionally crop up on the ground. Collect a power up and your dragon sprouts another head – thus increasing the fire power – and you can have up to three heads at once, making things decidedly easier.

As well as blue eggs there are orange eggs which release power up symbols that tend to increase the strength of your shots. Sometimes there are the flying creatures that glow: shoot these and they also release power ups, including ones that shrink the size

LASER SQUAD

BLADE £19.95 ■ Joystick or Keyboard

8-bit wargamers received something of a gift a few years ago when Firebird released a £1.99 game called *Rebelstar*. It became an instant cult hit and fans of the game pestered the author Julian Gollop for more of the same. *Laser Squad* eventually appeared on the smaller machines and now, after a long wait, it's finally available on the Amiga.

If you're unfamiliar with the game, it's a one or two player tactical wargame played over a set number of turns, viewed in pseudo-3D. Each player controls a bunch of troops – the exact number depending on the scenario – and the idea is to accrue enough victory points, by destroying specific items or numbers of the enemy, or achieving other objectives, such as making it from one side of the game map to the other. Each and every member of your forces has a set number of 'Action Points' which are used up by movement, firing, changing weapons and other actions. Combat occurs whenever two enemies spot each other and the screen display changes to allow the attacker to position a cross-hair sight on the target and then choose a variety of shots depending on the weapon and amount of action points left.



For example, a member of the blue team spots a member of the red team and elects to fire at him. Blue then has the option of either automatic fire, a snap-shot or an aimed shot: the more accurate the shot, the greater the cost in action points (the automatic option only appears if the character has a weapon with automatic fire capabilities).

There is also an option called opportunity fire, which occurs whenever a member of the opposite team wanders into

■ **(Left) The Moonbase scenario and the Rebels go rushing in (where angels fear to tread?).**

AMIGA FORMAT GOLD

of the dragon making it easier to dodge between the enemy fire. Take a hit and the first things to go are the extra weapons, swiftly followed by one of your five lives: and starting again with the single head can be a real pain!

Make your way through the stages – the later ones being particularly mean as some of them only allow you to fly over certain parts of the scenery whilst still chucking wave after wave of nasties at you – then destroy the guardians and it's job done.

GRAPHICS AND SOUND

The sound effects are on the disappointing side, simple gun noises and the scream of the dragon as it gets blasted out of the air. The graphics are much better, being colourful, well drawn and well animated. Overall it looks as close to the coin-op as you could wish for, though the sound's not perfect.

JUDGEMENT

Not just another shoot-em-up, surely? Essentially, yes. It has a nice scenario and a few extra frills, but the speed and excitement of the coin-op do seem to have been lost somewhere in translation. It's still a good game and will most certainly keep blasting fans happy for a respectable amount of time, but it's not one of the best of its type and lacks just a touch of depth. ***Andy Smith***



■ You've taken a couple of hits and lost two heads, but you can improve the strength of your shots by bombing that orange egg.



■ Collect the blue symbol for even more wicked firepower!

GRAPHICS	8
SOUND	5
INTELLECT	2
ADDICTION	8
OVERALL 67%	



the line of sight of one of your troops who has at least half his action points left. So the whole game revolves around the player trying to achieve his objectives without leaving his forces stretched and quite possibly defenceless.



■ Dishing out the arms at the start of a scenario. Serious credit-juggling skills needed here!

There are five scenarios on the original disk with expansion scenarios planned. The scenarios include *The Assassins* in which the player has to break into a base and eliminate one Sterner Regnix, and *Rescue From The Mines* in which the player must rescue some imprisoned comrades. Obviously, in two player mode one side is always trying to stop his opponent achieving his objectives. The game ends when either the set number of turns expires or one side gains enough victory points.

GRAPHICS AND SOUND

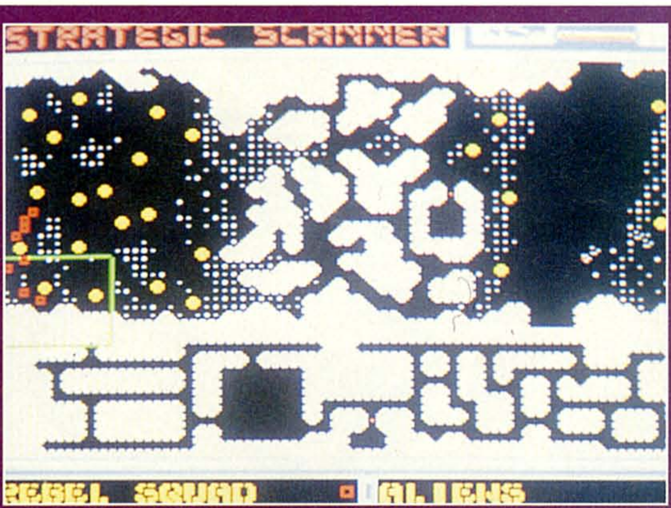
The graphics are not exactly state of the art but they are colourful and everything is well drawn: and besides, it doesn't need outstanding graphics to play well. Sound is limited to either a tune which plays throughout or spot effects, both of which are fine. For a game of its type it's a heck of a good looker.

JUDGEMENT

The game system is simple but very effective and it doesn't take long to get to grips with. The seven difficulty levels for most scenarios will keep you playing against the computer – which takes no prisoners – for a long time.

It is even better in two player mode when your human opponent makes some unexpected moves! *Laser Squad* is a terrific game that is superbly playable and can definitely be recommended as one for the library of any gameplayer.
Andy Smith

GRAPHICS	6
SOUND	6
INTELLECT	9
ADDICTION	8
OVERALL 93%	



■ The Strategic Scanner can be called up at any time to give you a complete overview of the playing area. Very useful, tactically.



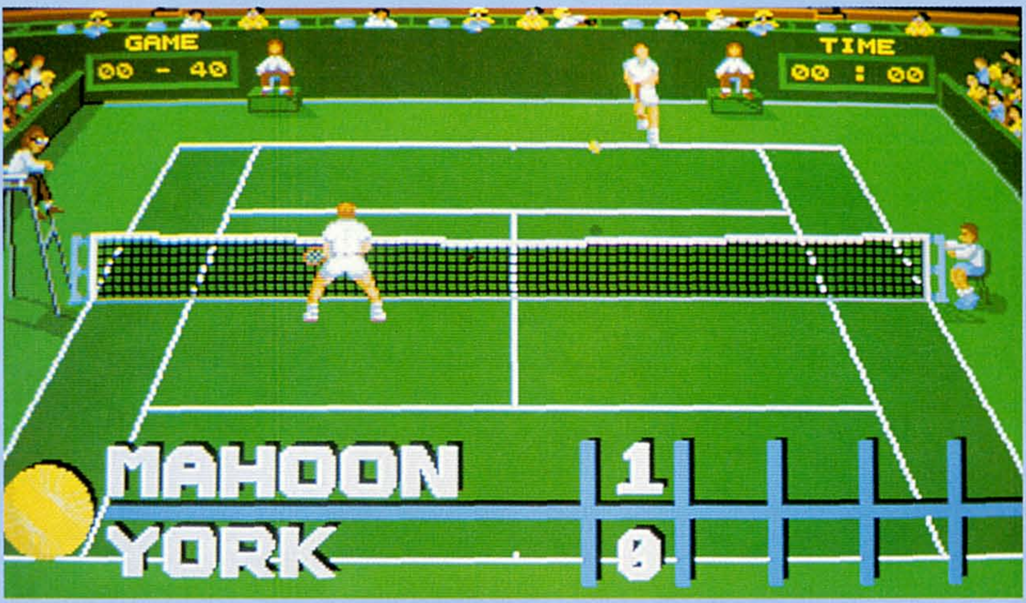
■ In Fire Mode. Move the cross-hair over an enemy and then select the type of shot to fire (your choices being snap, aimed and so on).

PRO TENNIS TOUR



■ Practise against the machine before entering a tournament.

UBI SOFT £24.99 ■ Joystick



■ Just into the first set and Mahoon adopts an aggresive stance at the front of the net. Effective when it works but disastrous when it doesn't. Some players are extremely adept at lobbing or passing you.

As well as snails and Sacha Distel, the French are pretty keen on their tennis: hence this simulation of the game from Paris-based Ubi Soft.

Essentially it's a one player game in which the player competes in the four Grand Slam tournaments. There is a two player mode but it's only used for practising. Should you fancy practising solo, you can step onto the court and bash away at the balls served to you from a machine, which has six pre-set programmes to match your ability, or you can just chuck a few balls in the air and try to improve your serve.

Once you reckon you can handle a computer-controlled opponent, it's time to enter a tournament (seeded bottom at 64) and gain points by winning



■ It's now your turn to serve, at Flushing Meadow, New York.



■ The French Open (on clay). Haigh's about to serve an ace.

through the rounds and eventually grabbing the tournament title if possible (and increasing your seeding along the way).

Tennis (in common with other ball games) has often suffered in the past through lack of control. Frequently, for instance, the viewing angle has made it very difficult to guess where the ball might land. But in Pro Tennis the control is great. It uses the old favourite view of slightly behind and slightly above the player throughout the game, but for each tournament match your player remains at the front of the display making it much easier to judge where the ball is going to land and where to position your player. On the easy level there's even a cross that appears on the ground indicating roughly where your player should be to return the ball. This cross also appears on the other side of the net during the serve, to aid accuracy.

Your player is also very adept at switching hands and producing some stunning shots with little prompting from yourself (on the easy level at least, but things get much tougher on the higher levels). That said, it still takes a while to get to grips with the controls especially if you're playing a two player game and have to play on the far side of the court. Win through the rounds, grab the tournament trophy and increase your world ranking before jetting off to another part of the world and another tournament.

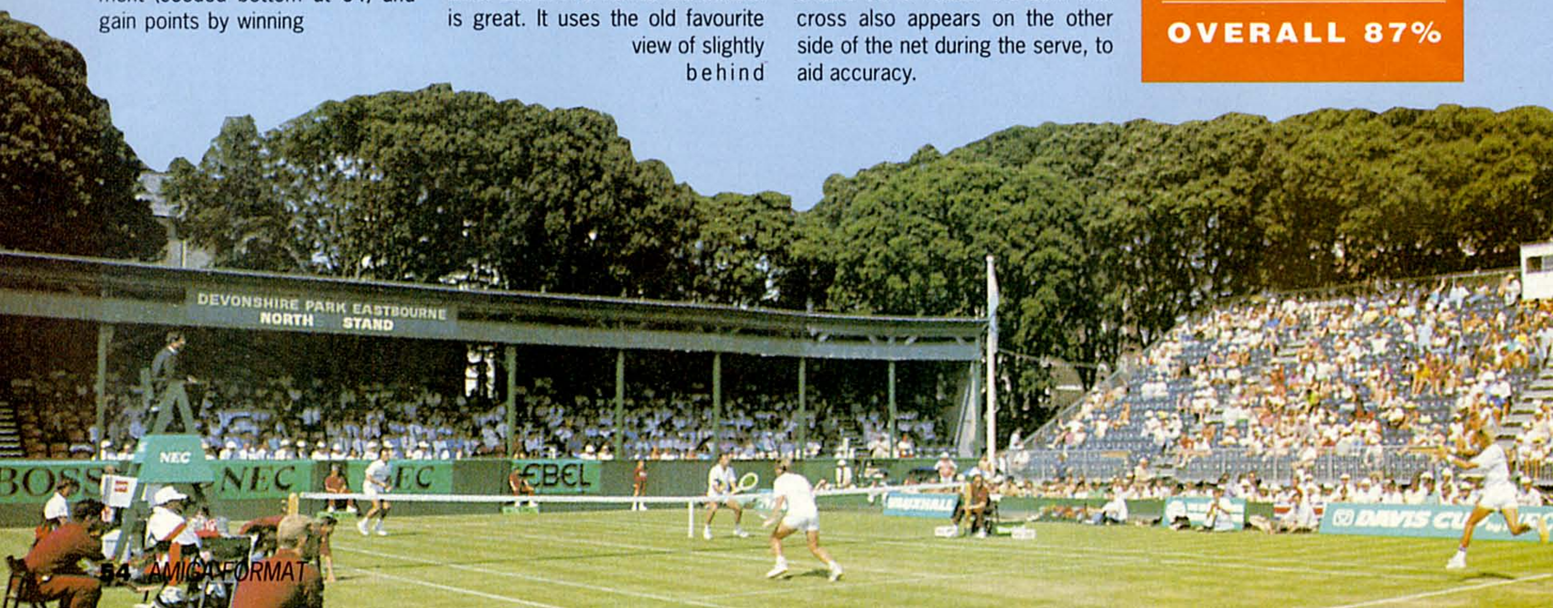
GRAPHICS AND SOUND

The viewing angle is just right and contributes greatly to the enjoyment of the game. The animation of the characters is also very good, but possibly even better is the sound which is terrific – especially the line calls. All in all it looks and sounds great.

JUDGEMENT

Even if tennis is not your favourite sport you'll find *Pro Tennis Tour* a great game to play. It's not a brilliant two-player game, but solo you'll find it very challenging, especially on the top professional level, and addictive enough to keep you coming back for many matches. Arguably the best tennis sim to have appeared on any machine, not just the Amiga. ***Andy Smith***

GRAPHICS	8
SOUND	8
INTELLECT	3
ADDICTION	8
OVERALL 87%	





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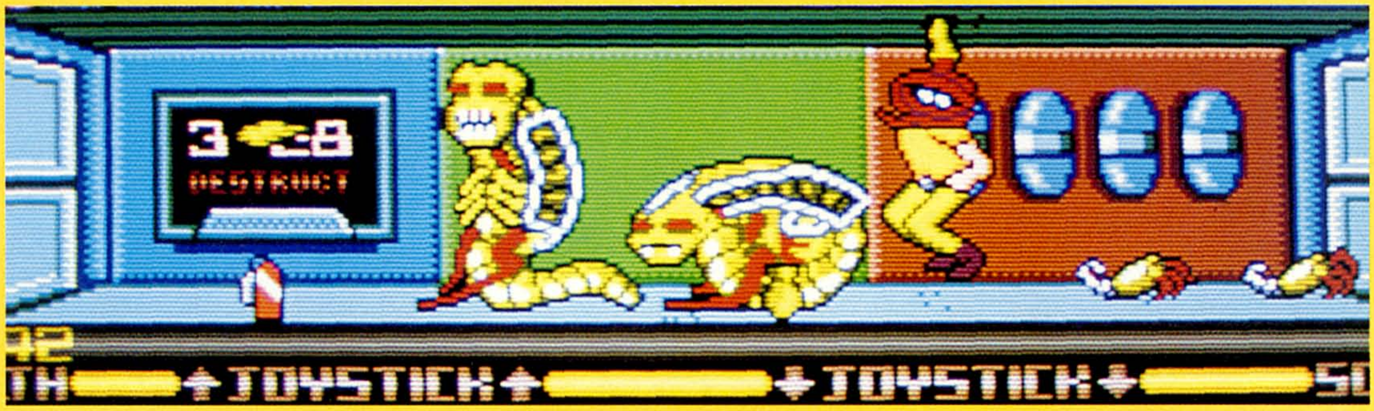

NEVERMIND











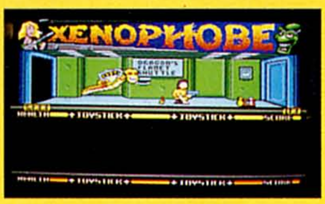
■ Aaargh! Grabbed by the throat by a nasty squidgy alien! Waggle the joystick to free yourself.

XENOPHOBE

MICROSTYLE £24.99 ■ Joystick

A bit of a shock to the system this: MicroProse, renowned for their simulations (and buying other companies!), have turned their corporate hand to coin-op conversions.

Xenophobe, the Bally Midway coin-op, first appeared way back in 1987 and was one of the first simultaneous three player games to hit the arcades. The MicroProse incarnation can only support two players, but the scenario remains unchanged: Xenos have invaded several space stations and you have to go in there and secure each base in turn before they take complete control.

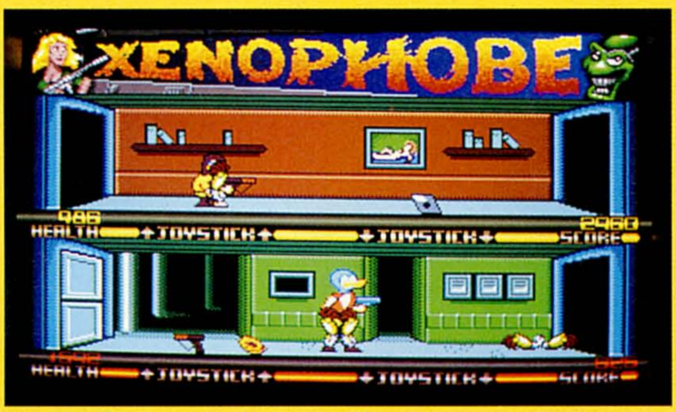


■ Crawling around is much safer – except when then Xenos attack from behind!

"Before they take control" means you've got a set number of the 'orrid little devils to blast away before the crippling time limit expires. Fortunately you're armed with a hand gun and the previous occupants of the bases left in such a hurry they didn't have time to clear everything away. There are plenty of more powerful weapons to collect as you walk, crawl and slide your way through the horizontally-scrolling rooms that make up each base.

As well as weapons there are things like floppy disks which, when collected and inserted into an appropriate terminal, can switch on teleports to allow swift movement around the base. Then there are healing potions which can restore your energy when collected: contact with the Xenos, both the big ones and the small squid-like ones, causes your health points to drop rapidly.

As you only have 2,000 points to start with those potions can be a life saver, literally. So, if you can kill the right number of aliens and collect any pieces of extra equipment to use (or trade in for points at the end of each stage), then move on to the next base to face more aliens and blasting action.



■ In two player mode it's much easier to clean out the stations of aliens – but watch out for those clingy ones, boy do they sap energy!

GRAPHICS AND SOUND

The music playing throughout is good stuff, though you can opt for sound effects as well which are just as good. The graphics are very close to the original and everything is well animated and moves smoothly. No problems in the looks and sounds department.

JUDGEMENT

It's good: not brilliant, but satisfying and different enough to keep you playing. After a while you may start to think it's all a bit repetitive but start using some of the hardware instead of just hoarding it and you'll discover new areas of the game that will increase the enjoyment. As in most games, the simultaneous two-player option also adds a fair ol' slice of lasting interest. ***Andy Smith***

GRAPHICS	8
SOUND	7
INTELLECT	4
ADDICTION	8
OVERALL 76%	

PREDATOR

ACTIVISON £19.99 ■ Joystick

Arnie Schwarzenegger plays lead sprite in this interpretation of one of his better movies. The scenario is this: a nasty alien type has crash-landed in some jungle or other that Arnie and a bunch of other military pals happen to be working in. This alien geezer keeps killing Arnie's mates so you, as Arnie, have to move through several horizontally-scrolling levels of the game (starting in the jungle) and avoid not only the life-sapping gaze of the alien – represented by a triangle, or a collection of three dots that are not at all hard to outrun – but also a whole bunch of machine-gun-mad rebels and some rather nasty jungle animals.

As you move through the levels there are different weapons to pick up (a good job too, because that's the only way to rearm yourself), which may look different but seem to have the same effect. Keep running, avoid taking hits – almost impossible – blast anything that moves and hope you make it to the end of the level.



■ Time to exchange weapons with a recently-deceased buddy.

It's not a brilliant game design to start with, but the awful graphics (when did Arnie have his legs removed and Paddington Bear's grafted on?) do nothing to help. Hope 'Orinoco' Schwarzenegger never gets to see it. ***Andy Smith***

GRAPHICS 3 / SOUND 3 / INTELLECT 2 / ADDICTION 4 / OVERALL 22%

QUEST FOR THE TIMEBIRD

INFOGRAMES £29.95 ■ Mouse, Joystick or Keyboard

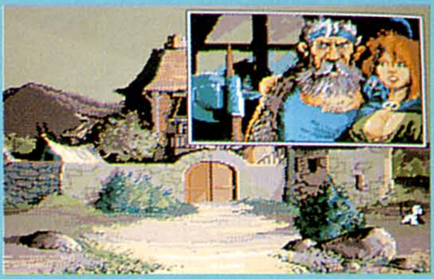
So, you've got to find a Time Bird, huh? Not just any old avian, the Time Bird is able to slow time and and speed it up. The reason why you have to find it is the time limit is a little on the tight side: Roxanna, daughter of the witch Mara, has to keep the god Ramor inside his conch-shell prison. Otherwise, in nine days' time, the world Akbar goes down the tubes. Roxanna is a spell caster, and is sure that she will succeed, if she can find the ingredients for a mighty incantation. The game starts at the home of Bragon the Knight, a retired hero who you can recruit to your cause. It's a good idea, because his axe the Reaper can deal with some of the nastier inhabitants of Akbar.

Their are two other possible recruits to the cause: Bulrog and the Unknown Knight. Each character has their own particular talents, and using the right person for the job is the key to success.

Travelling around Akbar is a doddle. A very pretty map screen is drawn, and a withered old gent (known as the narrator) moves a stick around the various locations. Point to your destination, click on the mouse button, and off you go!

The lands of Akbar are known as the Marches. Each one has its own flavour, from the domain of the Snufflers to the March of a Thousand Greens. This latter place is not populated by brussel sprouts, but is in fact a forest.

Playing the game is a veritable feast on the old peepers. Each


■ Bragon and Roxanna prepare to set out.


■ First destination is to be the Gaping Lands.


■ Mounted on fliers, you travel there swiftly.

MIRRORSOFT £24.99 ■ Mouse, Joystick or Keyboard

BLOODWYCH



■ Choosing a character to play at the start of a solo game. All the champions have different capacities and abilities, so choose well...

The land of Trazere has all but been destroyed by an ancient evil. In times long past the Bloodwych, a council of powerful mages, was betrayed by the sorcerer Zendyck. The Bloodwych stood for all that was good and decent in the world, and were fair and just rulers. Now Zendyck rules unopposed, and Trazere is suffering an age of darkness.

To Zendyck, like all other successful villains, ruling the world is simply not enough. He seeks to reduce Trazere to 'original matter', and then to remake it in his own image. To help him he is summoning a Lord of Chaos, the only being that can do the job. Lords of Chaos are reknowned for being untrustworthy, and this one is probably going to do a runner once it has its tentacles round the goodies (ie the original matter).

But the Bloodwych are tougher than Zendyck thinks. Being reduced to individual atoms only slows them down. Using arcane magicks they have gathered the last sixteen champions in the land, and have transported them into the castle of Treihadwyl. Which is where you come in...

Bloodwych is a fantasy adventure based on a role-playing system. At the heart of this system are highly detailed characters which the players control. The character's statistics, hit points, magic and possessions are laid out on the left of the screen, while the picture of the character and his buddies are on the right. The system is easy to use and is also nice and clear.

The game is similar to *Dungeonmaster* or *Bard's Tale*. You explore a large complex, bumping off the bad guys while attempting to complete the quest. In this one you have to find the four magical crystals, and finally destroy Zendyck. The castle is large, and contains all sorts of nasties. It is important to know where you are, so it would be a good idea to draw a map as you explore.

Being in communication is important. You can talk to strangers as well as some of the enemies. You refer to the commu-



■ On foct, trouble threatens...

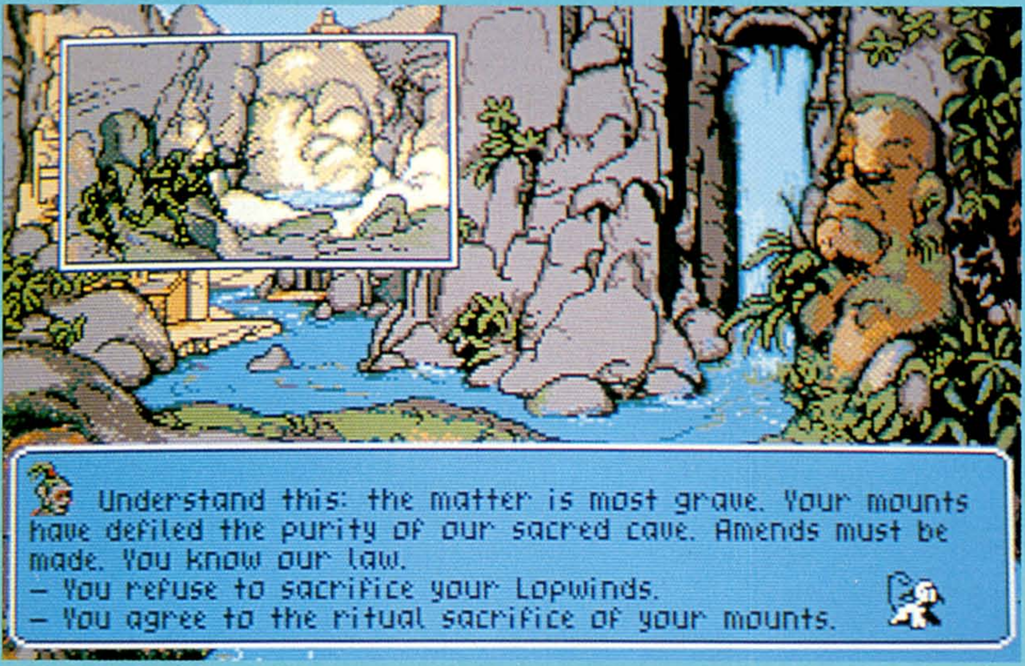
location has a background picture. Moving the mouse over these will reveal that some of the places are worth visiting (the pointer changes shape, from Roxanna's pet Furry to four outward arrows). Clicking on these locations will reveal a new place: perhaps a path through some caves, or some people to talk to in a crowded market.

Pressing the left mouse button will overlay a picture of your characters on the scene. Another button press on the relevant character will allow them to converse, charm or charge the person or place of your choice. You can also make the characters eat: you did get Bragon to bring a packed lunch along, didn't you?

There are lots of different places and people to visit. Sometimes a text box giving a narration will come up, and occasionally this includes a multiple choice



■ But you survive to reach Froth.



■ Arriving in the Gaping Lands, you are faced with an uncomfortable choice: bow to the local customs and let your mounts be sacrificed, or attempt to flaunt tradition? Either way, I'm afraid, you lose!

response from you. The choice you make decides your future course in the game...

GRAPHICS AND SOUND

The scenes and people of Akbar are captured very well, with some delicate pastel shading. Some water colour specialist has done very well on the Amiga, spending effort getting everything right. If you get a mount, you're also treated to a scrolling view of it with the map in the background. All in all, very pretty indeed. As for sound, a continuous tune plays gently at the background, replaced with more appropiate background noise when you go a specific location. The sound gives that extra storyteller touch which makes *Time Bird* special.

JUDGEMENT

There are similar interactive fiction games available, but What *Time Bird* has is subtlety. It feels like a story is being read to you, and everything you do has some effect and influence on events.

Using a mouse is too fiddly, and I pity the people who prefer joysticks. Finding all the places to go takes time: why couldn't they have been made more obvious? *Time Bird* won't keep you engrossed for months, but it's a quality Amiga game.

Pat McDonald

GRAPHICS	9
SOUND	7
INTELLECT	8
ADDICTION	7
OVERALL	**82%**



■ On a solo exploration of the dungeon, Sir Edward comes upon some curious things...

nications menu and select what you are trying to say. For instance, if you are attempting to recruit someone, you might introduce yourself, ask what the other guy's name and profession is, and then try to get round him by by making smalltalk. Talking can be important: some enemies do have useful info.

Remember to commend other members of the party occasionally to keep their spirits up, or they might just take it into their heads to wander off. Don't forget to keep characters fed and watered, or they start taking damage. Eat when you need to, not just when you've got food. It is sometimes better to keep a few characters well fed than the whole lot half fed. Sleep accelerates the rate at which characters heal, and also characters only gain experience and magic while they are sleeping. Being by a bed and sleeping is better than sleeping in a corridor.

I have no idea how much experience you need in order to advance your characters a level. During my many games I once managed to get a fighter to second level, but the whole party was greased by a giant crab just as I was about to save the game.

GRAPHICS AND SOUND

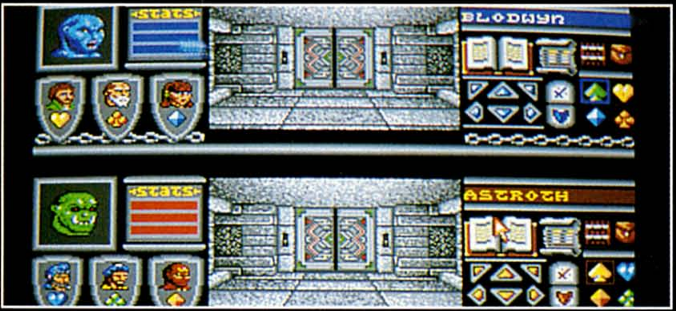
What I saw of the scenery was nice (and as I never got to the lower levels I can't offer an opinion on them). The monsters and characters were nicely drawn, but the way they moved was wooden. Combat involved the bad guys moving their arms up and down, with little messages telling you the damage inflicted or received. Overall the artwork was nice, but it didn't test the Amiga's abilities.

The sound was limited to the occasional 'Ooof' and 'Aaargh' during combat, but very little more. There wasn't even any background music.

JUDGEMENT

If there is one problem with the game, it is that you can develop a perfect plan. I enjoyed *Bloodwych* immmensely, but then I'm into this sort of thing anyway. It is definitely not a beat-em-up, as that guarantees a deceased party and oblivion for Trazere. Another thing: I ended up hauling round my dead buddies because I couldn't work out how to drop them after they had been killed. Still, great fun for all you role-playing freaks out there, and one that may eventually become a classic. ***Adie Stewart***

GRAPHICS	6
SOUND	3
INTELLECT	8
ADDICTION	9
OVERALL	**79%**



■ The two-player option allows two to become members of a party, exploring the dungeons in tandem or splitting up if necessary...

COKTEL VISION £24.99 ■ Mouse or Joystick

LEGEND OF DJEL

You are Djel, only son of Hokram the ex-chieftan and Esabelle the witch. On their deathbed, their only wish was to be recognised as people with moral fibre, rather than the dodgy, troublemaking magic users that everybody assumed they were. Now's your chance to clear the family honour and make a name for yourself.

The underlying storyline is simple enough: something is causing mischief amongst the mightier members of your land. Kal the Pauper has had to steal all the crops from your nation in order to live. Azeulisse, the mistress of the 100 countries, has had her daughter abducted: and until she is returned, no more children will be born. Finally, Theros, a rather rich magician, has caught a vile skin disease. Until he's rid of it, the plague will spread throughout the length and breadth of the land.

You are not without help, however. Petroy the gnome, faithful companion to Hokram, reckons that he can make a potion for Theros' disease: if he gets the right ingredients. And a useful heirloom inherited from daddy is the mysterious Great Alambic.



■ Djel's den is a repository of items and centre of the game.



■ If you accept this character's offer, much good will come of it...



■ Rewards for good gardening...

Put three bats in, add a bit of lead and ten gold coins pop out. If Kal gets enough gold, then his people will leave your crops alone. Another of Hokram's works is a mighty statue of magic. It lets Djel travel wherever he wants, without spending time or cash.

Playing the game is easy. You just move the mouse pointer where you want to go, and click on the button to investigate. Just covering the screen and pressing the button doesn't help, because the number of clicks available to you outside your den is limited.

Solving some of the puzzles is easy: such as the magician of the Moving Lands. All you have to do is to change the scenery around until it suits him just right. Then you are given some clues so that you can proceed ever onward with your quest: If you're lucky.

Combat in the game comes in two varieties, mental and physical. Mental is easy enough to understand, because it's just a simple board game of surround. Physical is a damn sight tougher to get to grips with, because you can be any one of three dragons: Fire, Water and Earth. Each is slightly better than another, and you transform between them by moving over crystals. Damaging your opponent is performed by spitting fireballs at them. If it sounds confusing, well it is.

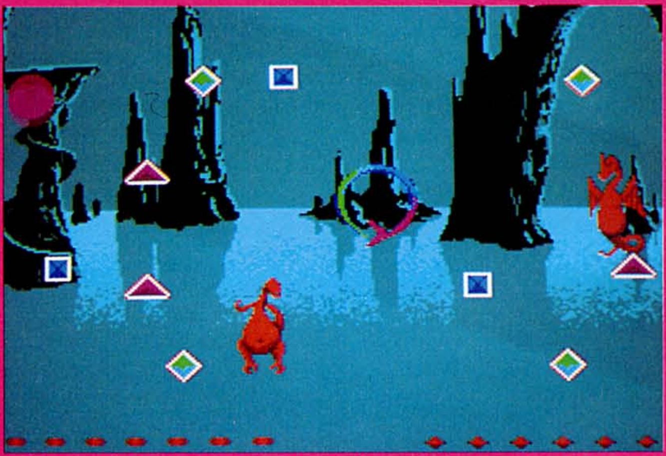
GRAPHICS AND SOUND

The pictures used in *Legend of Djel* are quite good, although the quality ranges from good to suspect. Colour strobing is used to indicate that something interesting is going on, which makes you suspect that whoever programmed it wasn't clued up on animation techniques to any extent. The subgames, while competent, don't stretch the Amiga in the least. After some sampled music at the start, the effects are rather puny by today's standards.

JUDGEMENT

If you want a mouse click adventure game, then *Legend of Djel* is just what the doctor ordered. In terms of appeal or depth, it really doesn't have anything to recommend it, but the puzzling may keep you occupied for a few days. ***Pat McDonald***

GRAPHICS	7
SOUND	3
INTELLECT	5
ADDICTION	4
OVERALL 59%	



■ This is the battleground for physical combat. You are the dragon on the left, and you and your opponent must change elements to hit...

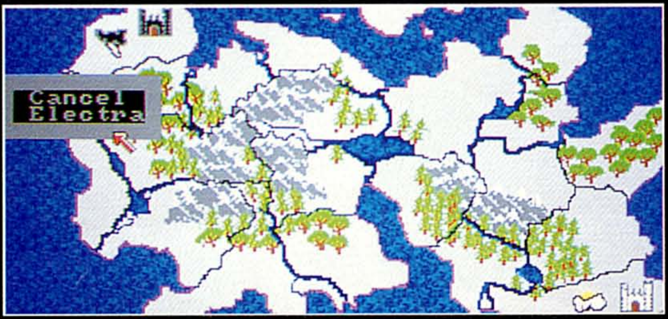
LEGEND

CRL £19.99 Mouse, Joystick, Keys

The forces of good and evil square up to each other once again. This time they're both fighting to capture the half of a staff that the other side owns, in order to gain complete power.

It's a one or two-player wargame played on a island of 20-odd sectors. Both players buy armies with the money they earn from owning land and march towards the enemy's base: capture it and you've won. There are a few extra frills thrown in including the ability to employ assassins, thieves and the occasional dragon, all of which can be used to upset the other player.

In one player mode the computer is particularly easy to beat, even on hard level, but there's more fun to be had in two player mode. The graphics have a certain naive quality about them, but they suffice and though the sound effects are dire, they don't get in the way of the gameplay. Simple stuff that's too limited to challenge or keep you playing for more than a few goes. ***Andy Smith***



■ Moving around in the land of *Legend:* why not go to Elektra?

GRAPHICS 5 / SOUND 1 / INTELLECT 5 / ADDICTION 6 / OVERALL 52%

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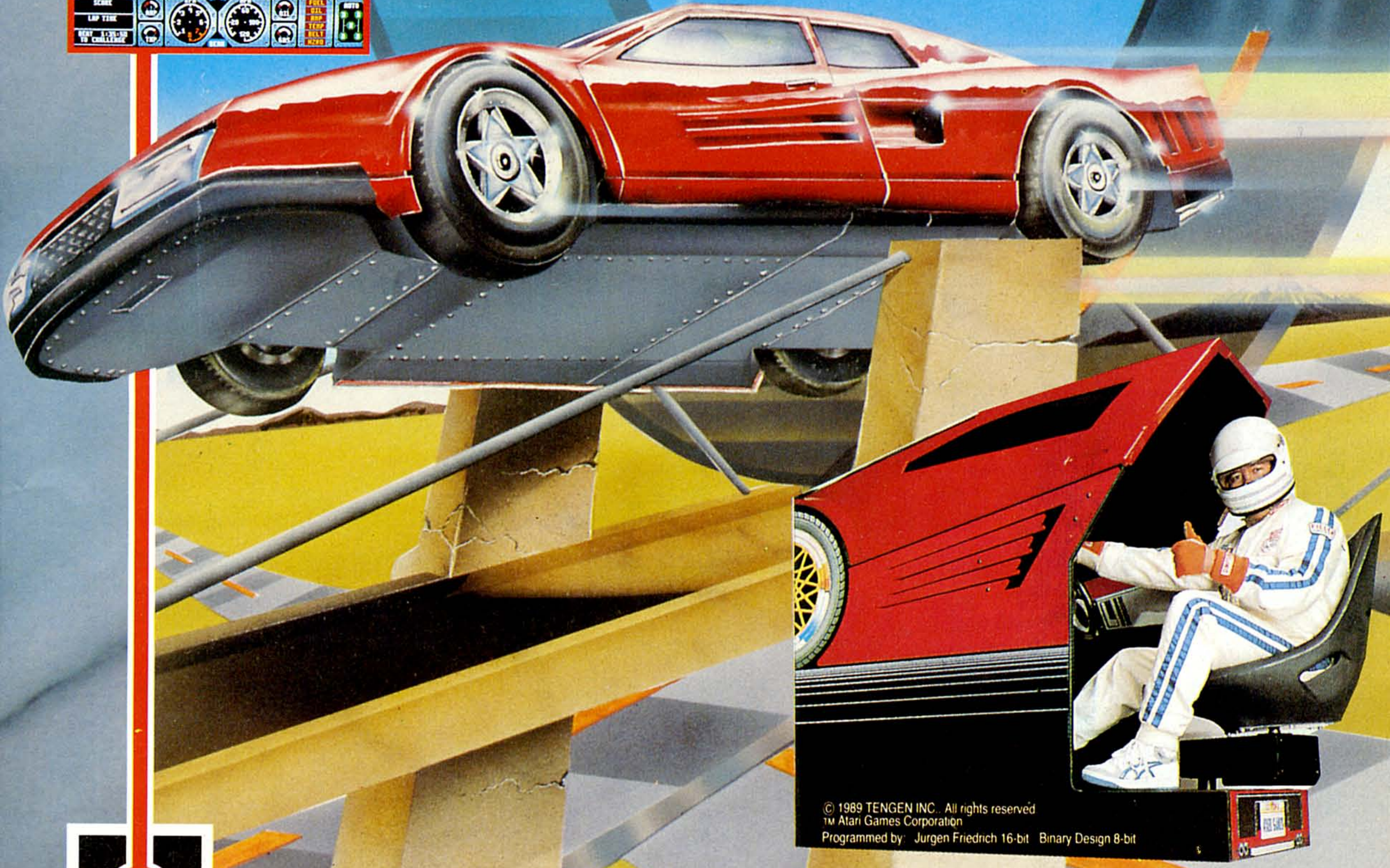
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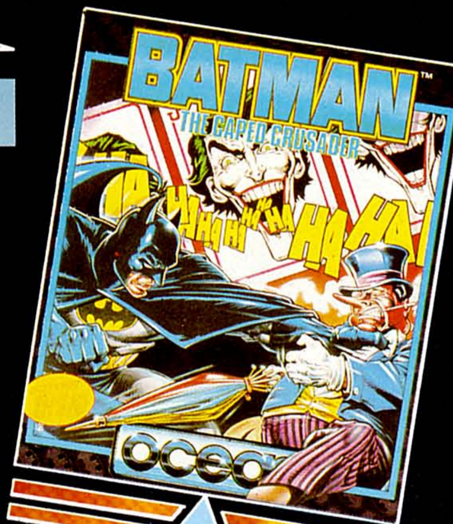
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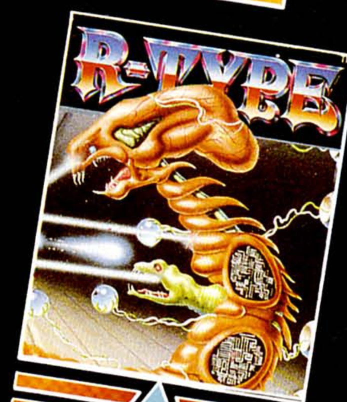
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QUARTZ

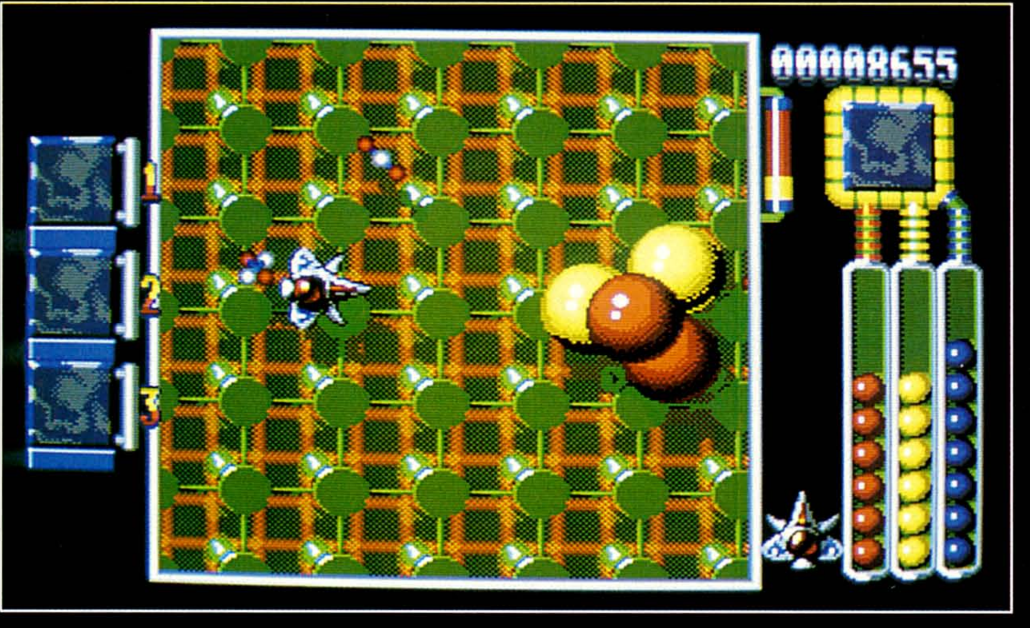
FIREBIRD £24.99 ■ Joystick

Aliens get absolutely everywhere: if they're not out in space destroying everything they can get their tentacles on, they're usually attacking the Earth. And if they're not doing that, chances are they're running around inside lumps of dense crystal at the subatomic particle level.

Well, they are in *Quartz*, the latest game from Paul *'Spindizzy'* Shirley. It's a viewed from above (mostly) shoot-em-up split into several sections. The first and biggest section (which is not dissimilar to *Asteroids*) is set within the lattice structure of a crystal where the player controls a ship and has to blast away at Hydrons (which look like yellow and red pool balls), to split them into quarks which in turn change into neutrinos once shot.

Collect enough neutrinos to fill the three containers on the right of the screen and you can then choose a power-up. Power-ups include things like eight-way firing (only lasts for a limited amount of time) and a RAM save feature which allows you to restart from where you bought the feature rather than having to work all the way through from square one all the time.

Your ship is also able to carry up to three power-ups and the player can choose which one to have active simply by hitting the space bar. Eventually, the aliens will detect your presence in the crystal and will drag you off into the next stage which is a horizontally-scrolling blast where waves of aliens give up neutrinos and there are ground-based objects to avoid. Reach the end of the section and there's an end-of-level structure to destroy before going back to the relative safety of the lattice. The other sections of the game include a meteorite dodging stage and some more blasting, this time of the vertically scrolling variety.



■ **The first end-of-level guardian. Mind its satellites and keep blasting away until you get a result.**



■ **Blast the Hydrons and quarks then collect the neutrinos.**



■ **Outside the lattice. Dodge those revolvoing arms to live.**

GRAPHICS AND SOUND

Excellent graphics, though the lurid backgrounds tend to make it difficult to see what's going on some times. It's all well drawn and smoothly animated. The title music is jolly and the in-game effects are OK if not outstanding.

JUDGEMENT

Very pretty, playable, and jolly tough: work is needed if you wish to do well in this game. Ultimately, though, it tends to get repetitive, so it's not a game that's going to keep you playing for months at a time. ***Andy Smith***

GRAPHICS	8
SOUND	6
INTELLECT	4
ADDICTION	6
OVERALL 68%	

ALTERED BEAST

ACTIVISION £24.99 ■ Joystick

The God Zeus has decided to bring you back to life, after many deeds of bravery and a while spent six foot under, so that you can go on a mission to rescue his daughter from the evil clutches of Nelf, the Lord of the Underworld.

Zeus isn't the only one with the power over life and death and Nelf doesn't want to give his up his prize that easily, so he's got together a whole army of zombies and other weird and wonderful creatures to keep you at bay. To aid in your quest there are power-ups to collect that can turn you into other unreal creatures including two bizarre lycanthropes, a werewolf and a weretiger.

It's a horizontally-scrolling beat-em-up converted from the Sega coin-op with end-of-level guardians and a range of kicks and moves. But that's about it. The graphics are not too hot when they're still, but they're worse when they're moving: blocky and very jerky. The gameplay is basic but it's still very difficult to control your character in the moves needed.

Altered Beast is a below-average game that fans of the original will be sadly disappointed with.
Andy Smith



■ **This is how the first end-of-level guardian first appears...**

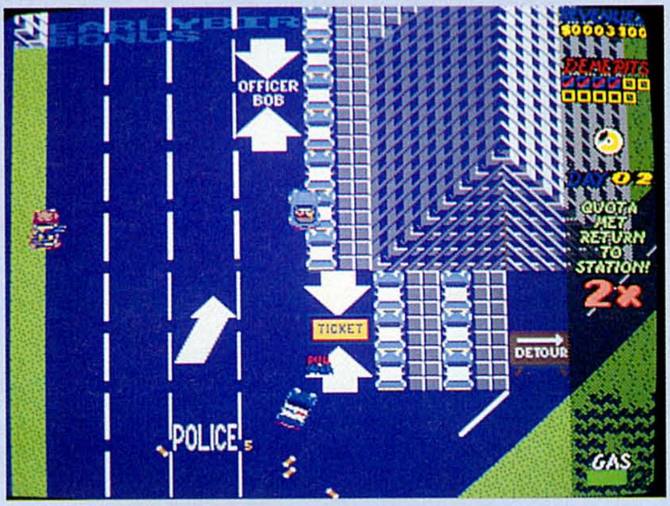


■ **...and he has the capability of changing his shape, too. Ulp!**

GRAPHICS 4 / SOUND 5 / INTELLECT 1 / ADDICTION 4 / OVERALL 33%

APB

TENGEN/ DOMARK £19.99 ■ Joystick only



■ Officer Bob returns to the station after fulfilling his daily quota: and just by chance manages to catch an extra litterbug as he arrives!

Life as an American traffic cop is never easy but poor ol' officer Bob seems to be in it up to his neck, what with litter-bugs, dope peddlers and the cantankerous station Sergeant to deal with.

Bob's average day begins with the Sarge issuing him with a target number of law-breakers to bring in within the time limit. Catching the perps involves recognising their vehicles and then hitting the siren (fire button) as the target just in front of your car (viewed from above) passes over it. The number of times a criminal has to be warned in this fashion depends on just how bad a crime they've committed: for example, drunks



■ Now get him back in time and receive a hefty bonus.

need three warnings before they'll pull over and let you give them a ticket whereas litter-bugs will pull over first time.

Occasionally Bob's day will become even more hectic as the Sarge hands out details of some particularly vicious crims who Bob can concentrate on arresting, rather than the usual bunch. Should you go after these, and catch up with them on the vertically-scrolling highway, you'll have to bash into them a set number of times (*Chase HQ* fashion) before you can capture them and return to the station. Get there before the time runs out and you'll then have to beat a confession out of the subject before the Sarge arrives by waggling the joystick from side to side (very ideologically sound!) Manage it and you'll gain a massive dollar bonus (for dollars read points) and the congratulations of the Sarge.



■ On the trail of another dangerous criminal. Beating a confesion out of the suspect may be fun, but it's a bit dodgy, isn't it?

It's all sounding straightforward so far, but then there are the innocent road users to consider and the roadside obstacles to avoid. Collide with any cars without your siren on or run off the road into the rocks and you'll crash the car and incur a demerit: collect 10 and it's game over. There are ways to reduce the number of demerits, primarily by collecting white bags that appear at the roadside occasionally. Other things to collect are donuts to increase your time allowance and hitch hikers for dollars.

GRAPHICS AND SOUND

Both are marvellous. The screen scrolling might have been a little smoother but it suffices and the sprites and backgrounds are all nicely drawn. The sound effects from the siren wails to the music and the deliberately mumbled speech are all very good. *APB* looks and sounds very much like its coin-op parent.

JUDGEMENT

The arcade game was good and so is the conversion. The control is a little tricky to start with and it's very easy to die, but persevere and you'll find it becomes a lot more enjoyable, to the point where you'll be coming back to it a good few times and struggling to make it to the next day. ***Andy Smith***

GRAPHICS	7
SOUND	8
INTELLECT	3
ADDICTION	7
OVERALL	81%

Mr HELI

FIREBIRD £24.99 ■ Joystick only

'The Muddy' may not sound like your average baddie but then *Mr Heli* doesn't sound like your average hero. Still, anything can happen in coin-op land.

You take control of the aforementioned Mr Heli in this multi-directional scrolling shoot-em-up converted from the Irem coin-op. There are end-of-level guardians to destroy and extra weapons to buy (collect the crystal structures, which act as currency in the game, along the way by shooting the earth blocks in *Super Mario Brothers* fashion).

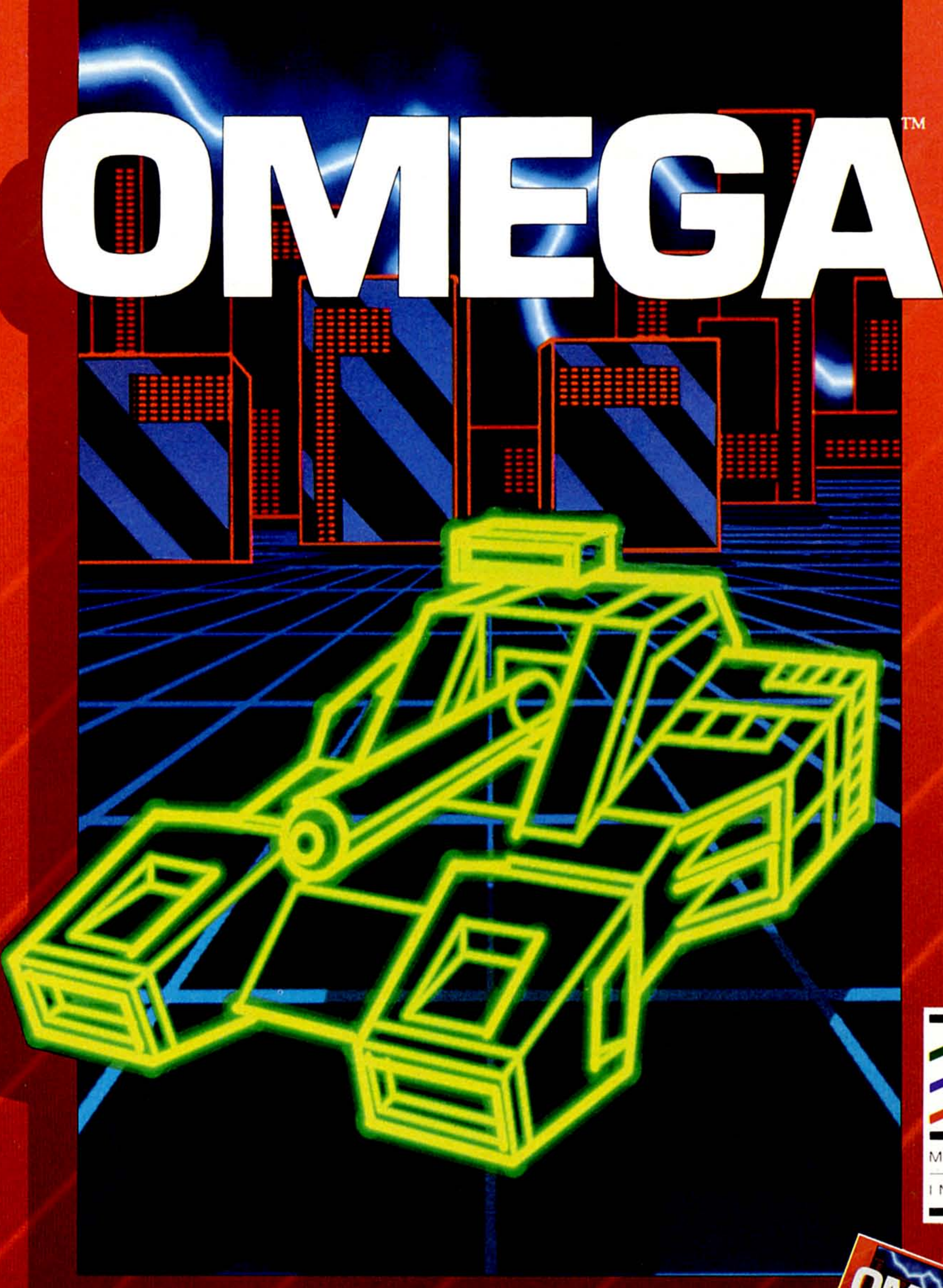
Of course, 'The Muddy' (a fine bit of Japlish!) has a whole host of minions who are determined to stop you getting to him, so take them out with your front and top-firing machine gun. Take too many hits from the baddies and the energy bar displayed at the top of the screen takes a dive until you lose one of your five lives and any extra weapons you have bought along the way.



■ Blast the earth blocks, collect the crystals, kill the aliens...

Irem may be famous for *R-Type*, but unfortunately *Mr Heli* is just not in the same league. It is a shame, then, that the conversion does nothing to increase its appeal, being jerky and slow. There are similar elements to *Blood Money* here but the gameplay is not as polished, it is just not as playable and you will be bored sooner rather than later. ***Andy Smith***

GRAPHICS 5 / SOUND 5 / INTELLECT 2 / ADDICTION 5 / OVERALL 52%



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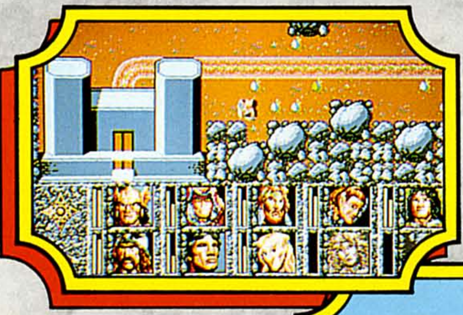
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The Companions must move swiftly through this wartorn land, cautious of strangers but seeking compatriots and ever alert to the rapid advance of the Draconian forces. The courageous elves will finally fall, but there is one last chance to free the loyal slaves held in Pax Tharkas and join together to recover the long-lost sword Wrymslayer in what could be the vital rallying point in rekindling resistance to the plague of darkness sweeping over Krynn.

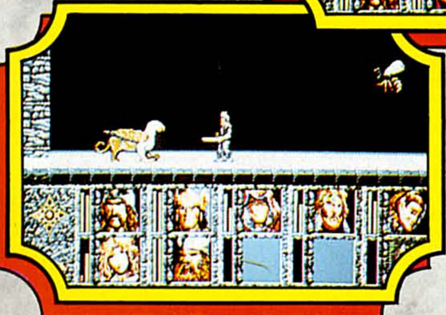
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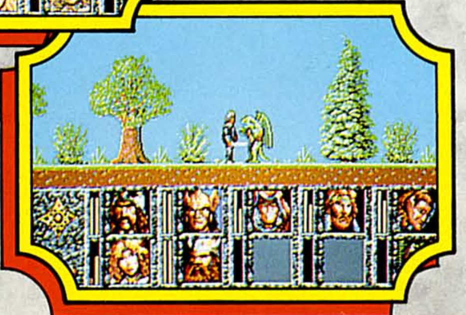
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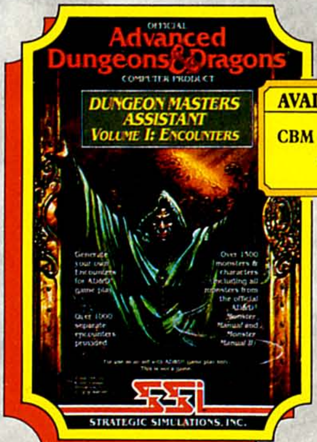
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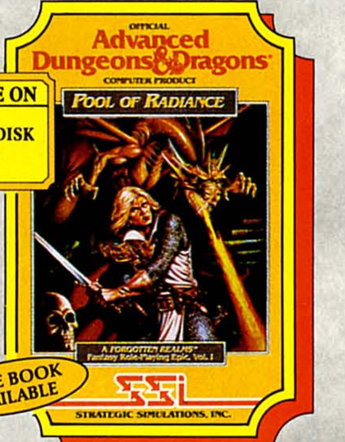
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BOOKS FOR BOFFINS

JASON HOLBORN takes a look at Abacus' latest books.

The Abacus range of books now represents the most complete collection of Amiga-specific documentation currently available. Whether you're just starting out in AmigaBASIC, or hitting the hardware in assembler, chances are that there's an Abacus book to suite your needs. All are available from HB Marketing on 0895 444433.

Amiga 3D Graphics Programming In BASIC ■ £14.95

No prizes for guessing what this book is about. The book guides you through the principles and algorithms behind such complicated subjects as ray tracing, representing 3D objects on a 2D screen and others.

Unlike the vast majority of books dealing in such subjects, every demonstration program is written in bog-standard AmigaBASIC, therefore allowing ever Amiga owner to benefit from the goodies on offer. The book provides an in-depth look at the fundamentals of ray tracing (light sources, reflections, shadings etc) using all the Amiga sceen modes (including HAM!), information about wire frame models, representing the same object within different resolutions and a lot more besides. If you've ever wanted to try your hand at basic ray tracing, but felt put off by the relitively expensive price of even the most basic of packages, then Amiga 3D graphics programming could be what you've been looking for. As an added bonus, the book even includes a complete ray tracing system consisting of a wire frame editor and final scene rendering program.

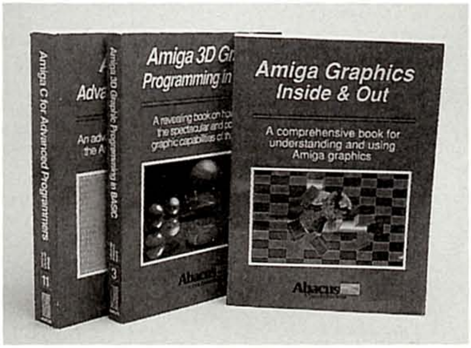
Amiga C For Advanced Programmers ■ £18.95

Even the most hardened techies need a good book to fall back on occasionally. For C programmers, Amiga C for Advanced Programmers may be worth investigating as a worthy companion during those long hours of programming.

The book is aimed fairly and squarely at the more technical among you who program the Amiga in C. Although the book is based around Manx's *Aztec* compiler system, *Lattice* owners should have no problems using the book.

Subjects covered include an in-depth look at how compilers, assemblers and linkers work, designing and implementing user interfaces using the Amiga's Intuition windowing environment, coping with large programming projects (must read that section myself!), using jump tables and dynamic arrays, mixing C with assembler routines etc.

As an added extra, the book even includes a complete C listing for a text editor (which will have to be typed in using your text editor!). If you're serious about your C programming, then Amiga C for Advanced Programmers provides a good read and can also act as a very useful source of reference.



■ **The three Abacus books reviewed here are just part of their collection of Amiga-specific texts.**

Amiga Graphics Inside & Out ■ £18.95

Unless you're a hardware programmer, the official documentation for the Amiga's graphics systems software isn't the lightest read you could subject yourself to, and so a third party alternative is always welcome.

Amiga Graphics Inside & Out starts off with a nice introduction to the principles behind how the systems software handles the graphics on the Amiga. Subjects covered include Views, ViewPorts, RastPorts, bitmaps and other brain cell destroyers.

Once the theory is dispensed with, it's to time to get out your compiler and start programming. The book includes full source code demonstrating how to carry out such wondrous tasks as accessing HAM from BASIC, using fonts, dumping intuition screens to a printer and Amiga animation explained (including a look at the copper and blitter). Although the book is initially rather heavy going, it contains a positive wealth of useful information for advanced BASIC and C programmers. ■

RODENT RIVALRY

Need a new mouse? JASON HOLBORN checks out a mouse with no balls.

The Amiga mouse is a resilient little beast, what with having to be pushed around all day by a hand from the sky which then proceeds to clobber it over the head every time it wants something done – it's no wonder the poor thing gives up on life eventually!

Once your mouse has finally kicked the bucket, choosing a replacement was a fairly simple affair – it was Commodore or nothing. But, over the space of just a couple of months, several third party manufacturers have started selling alternatives of which the latest is the Boing! mouse from the Amiga Centre.



■ **The Boing! mouse operates with light.**

Unlike the traditional mouse, Boing! uses an optical mechanism which has a number of advantages over the conventional rubber coated ball variety. For one, the lack of any moving parts means that the Boing! mouse does not suffer from clogging of the rollers (sounds painful) or worn parts (sounds even more painful!) As a result, Boing! should (in theory) last considerably longer than a conventional mouse.

The only disadvantage of using an optical mechanism is that the mouse will only function when used in conjunction with a special reflective mouse mat (which is, obviously, supplied). Boing! works by shining a light onto the mat, which is made up of thousands of tiny metal squares which reflect the light back to the mouse.

Another difference between Boing! and every other Amiga mouse is that it offers not two, but three mouse buttons. The two outside buttons function exactly the same as their Commodore equivalents while the centre button is designed for *X-Windows* compatibility.

Conclusion

£80 does seem rather a lot for a mouse, but chances are that Boing! will out live Commodore's mouse several times over. While the mouse does seem more responsive at speed, on-screen pointer movement seems a bit shaky when moving the mouse very slowly, which can be a real pain when working in high resolution. But, gripes aside, if you're after a mouse and can face having to part with £80, then Boing! is worth investigating. ■

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THE AMIGA EVANGELISTS

Photography TONY SPINKS

Trendy mews offices located just off London's West End: an ideal base from which to persuade London's design community that the Amiga is a powerful design tool. **GRAEME KIDD** talks to the Blues Brothers of Amiga DTP...

Ian Hegerty, Massimo Pilia and Damian Smith are evangelists for the Amiga, taking it into advertising agencies, design consultancies and video houses. They call themselves Pageplay Ltd, and have set up a Commodore consultancy that specialises in installing 'turnkey' Amiga solutions in creative studios. Three men with *A Mission:* a mission to spread the word about the Amiga's capabilites in the professional design field.

'Hegerty Pilia Smith' could easily be the name of an upmarket advertising agency, the kind of partnership that appears in highly-stylised photographs in the pages of *Campaign,* alongside such names as Bostock and Pollitt, and Saatchi and Saatchi. Casting all potential 'meeja' pretensions aside, the trio call themselves Pageplay and sell Amigas into the cut-throat creative world of advertising and design. A place where the budgets are as big as the clients are demanding.

All three have been involved in the computing world, in varying capacities, for a good few years. "We're all interested in computers", as Massimo Pilia, Pageplay's Technical Director, explains. "Two of us were programming in the Spectrum days when the A500 was a dream machine, and have been involved ever since." Additional experience gained in the retail/distribution trade, where no-one was really selling the Amiga as a serious DTP machine, led the three to set up their own Amiga dealership to promote the kit as a tool for designers. "We set up Pageplay as we felt that nobody was really looking after the Amiga in the creative field," says Damian Smith, Marketing Manager. "So here we are, evangelising."

Pageplay keeps in tune with the design world through a symbiotic relationship that has developed with the company they share premises with – Designers Inc. Designers Inc was set up about eighteen months ago, and Ian sold them an Amiga for DTP work. Last year, Designers Inc doubled in size – not entirely as a result of using the Amiga – but the wide range of clients it services and the problems the designers encounter while using the Amiga in the studio allow Pageplay to get a good perspective of the Amiga's performance in a working professional design environment.

"Sharing premises means that we can swap skills with Designers Inc", Damian says, "we sold them their Amiga and are always on hand to help out with hardware or software problems. In return, they advise us on design matters – for instance, they helped us by designing our business stationery. It's very useful having them around." Particularly as Pageplay is working on a showreel to demonstrate the Amiga's capabilities to Wardour Street video houses and advertising agencies. As well as being well handy for straightforward DTP applications, the Amiga lends itself well to ani-





■ (Left) Final visuals for a project undertaken by Designers Inc. The client was Nightingale Secretariat, an organisation which provides office space and office services on a timeshare, or short let, basis. A full information pack was the brief: "We produced these finished visuals directly from the Amiga," Laurence Lloyd explains, "we used the Amiga as a means to an end. The client had a very good idea of how the design would work from the full dummy we produced for the job. It was approved, and we just gave the dummy to our typesetters, without marking it up. They produced the setting for the final artwork."

■ (Right) Designers Inc used to share studio space with Admap Publications, the people who produce *ADMAP,* a glossy journal for the 'heavyweights' of the advertising industry. The publication is only available on a £100-a-year subscription, and it discusses state-of-the-art Advertising, Marketing and Research thinking, geared to the perspective of agency bosses and top-flight creative directors.

The brief was to redesign the magazine to reflect its important image and position in the market. The key objectives were to make it easier to read, easier to lay out on a tight budget and to make it more modern in appearance while still fitting in with its heavyweight, serious, authorative image. As a result of Design Inc and Pageplay's input, *ADMAP* is entirely typeset from Amigas. "DTP was ideal for the title's clear, concise layout – all they do is run the work through an output bureau and send it off to the printer," Laurence explains, "and in the process they are saving about £1,000 a month. They paid for the Amiga kit in 3 months."

■ Getting the message across to Media Folk. Mews premises shared by a design studio are a good platform, but you need to get out there and preach the message. Taking round a showreel is one approach, but ads in the glossies read by media peeps are all part of Pageplay's marketing mix for the Amiga as a creative tool.





■ Laurence Lloyd manipulates the mouse while Damian Smith looks on. Those with keen eyesight will spot that the Designers Inc logo is on the screen – a still frame from the 3D logo sequence that the Pageplay team created to head up their animatics showreel.



matics – essentially animated graphics which can be used to demonstrate the 3D effects of packaging artwork as it will appear on the carton. Animated logos or title sequences for video also fall within the animatics field, and having the skills of designers on tap is more than helpful in the showreel project.

Using an Amiga with massive hard drive and other add-ons, including a flicker fixer, Pageplay have worked on logos for House Channel, a TV project initiated by Saatchi and Saatchi. The first step in the journey towards a showreel is a stunning solid 3D implementation of the Pageplay and Designers Inc logos. "The Amiga can very useful in a professional video environment, either for producing video roughs on a low budget, or for producing work that has a 'computery' feel", Damian says. And when you consider the cost of buying, or even renting time on high-end video graphics systems such as Quantel or Harry, an Amiga set-up can pay for itself on the first couple of jobs.

Sculpt Animate, Professional Page and *Professional Draw* are the three main packages used by the Pageplay team in their evangelical work. They've recently run an advertisement campaign for themselves, taking full page ads that were produced entirely on the Amiga, separated directly and set to film. Headed up 'Computers for creatives', the copy runs on: 'Computers have long been the target of derisive remarks within creative fields. Cries of stunted creativity, sterility and poor quality are heard echoing around the corridors of many design, animation and advertising house. At Pageplay we think different, but then *we* would!' The copy continues, evangelising for

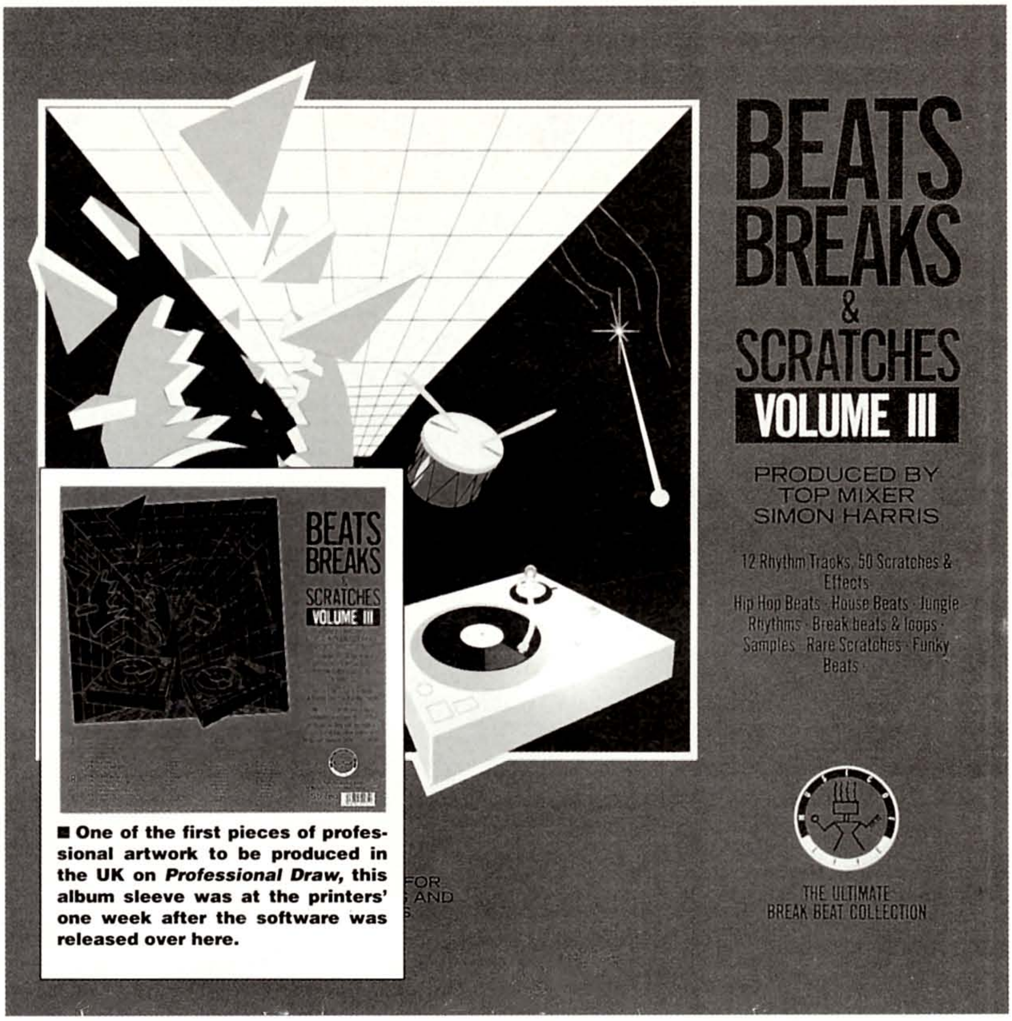


■ The logo of Designers Inc. themselves, close partners in crime of the chaps at Pageplay.

the Amiga and inviting creatives to discuss the potential with the Pageplay team.

Pageplay is aiming its message at the 80 or 90 per cent of designers who currently don't have computers, according to Damian – or at people who currently have Amigas. "Quite a lot of ▸


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■ **One of the first pieces of professional artwork to be produced in the UK on *Professional Draw*, this album sleeve was at the printers' one week after the software was released over here.**

creative people have an A500, or even an Amiga 2000 at home which they use for playing games on, purely for entertainment. They come in and see us and are mind-blown. Then it's our job to sell them a system and offer comprehensive support."

The basic service offered by Pageplay is one of installing 'turnkey' systems, which means they specify the complete hardware and software package configured according to the customer's needs. They set it all up in their client's studio so that all the new user has to do is plug in, switch on and start working. A bit of handholding is usually needed – designers are not generally computer literate, and there have been one or two horror stories in Pageplay's recent history. Like the fellow who insisted on pulling out memory expansions without switching the machine off first...

Recommendations

So what is the basic creative configuration for the Amiga, as recommended by Pageplay? An Amiga 2000 with up to 3 megabytes on board and a 20 meg hard disk, a 1084 monitor with a screen filter, *ProPage, ProDraw, DPaint III* and *Word Perfect.*

On the printer front they would recommend either the QMS PS810, or possibly an AT Bridgeboard and an HP Laserjet. "We tailor our system from this basic configuration," Damian says, "building it up or modifying it depending on what else the client is going to be doing with it." A video camera, flicker fixer, genlock board or scanner could easily form part of a bespoke system assembled for a customer. Full telephone support is included in the service, and of course the Pageplay team can draw on their own Amiga-using experience as well as on the lessons learn by their designer friends in Designers Inc.

The reaction, once a system has been installed, is generally very good, according to Massimo: "Once the software, *Professional Page* and *Professional Draw,* gets into the hands of designers, you really see it blossom." So we turn to Laurence Lloyd, Senior Designer with Designers Inc for an opinion on the Amiga's creative capabilities.

Computerised Creativity

Designers Inc has a solid portfolio of clients, ranging from Shell – for whom they designed the graphics for Helix Oil and produced the Formula Shell branding imagery – through HP (of baked beans fame) to *ADMAP*, probably the first and possibly the only UK magazine to be professionally produced on an Amiga DTP system.

Laurence doesn't see the Amiga as a tool for producing the finished artwork for a project. In his view: "the output is still too crude for finished images, but it's ideal for 'secondary documents', things for internal use within an organisation or for limited circulation. Documents that are better than typewritten but of lower quality than finished artwork." Which at first hearing doesn't sound too good for the Amiga's prospects.



■ ***ADMAP:* the only Amiga DTP produced mag in the world?**

A Tool and a Half

"We use the Amiga làrgely as a tool – as a means to an end. Although it's not what we use to produce final artwork, it helps us cast off type, to see how type is working. For instance, we used it to produce a series of brochures for a customer, producing final roughs for the client which showed how the flavour of the type works in the context of the design. The Amiga is a tool and it has become an invaluable tool in our design house, helping us in the design stage on projects as well as helping us in the concept stage. And of course, it doubles as an administrative workhorse, which isn't as much fun, but just as invaluable. For instance, it saves us a fortune in letterheads – we have about thirty types of operational literature, and with the Amiga we can produce everything on one printed letterhead."

Impressive Stuff

The more you talk to Laurence, the more your realise just how impressed he is with the Amiga's capabilities. "To begin with," he remembers, "I was a Luddite. I though using the Amiga would lead to the destruction of typography – I now know that's not the case at all. It's typographically good, especially as Commodore and other companies are licensing established typefaces rather than producing bastardised versions of fonts. We *have* used output for camera-ready artwork, on jobs where a rapid turnover is needed and when the client doesn't want to spend a fortune. Record company ads, for instance, where the crudity helps, and can become a design feature."

"The Amiga is ideal for setting up styles, and providing you use it as a means to an end, it can save a lot of time. I didn't think it would at first – I thought it would just take up space." he continues. "What the Amiga does is pretty damn amazing – if we were more involved in Quantel work, in animatics, we would use it much more for images. We're a print design house primarily, so the animation capabilities would be more useful for producing things like a dummy of a pack as part of an animated presentation that shows the client how the concept works."

"The uses for the Amiga are as diverse as your imagination and budget" Laurence concludes. ■

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Whatever your preferences – games, demos, utilities, graphics, sound or Workbench hacks – there's something for you on this month's Coverdisk. **RICHARD MONTEIRO** guides you through the disk's stunning offerings.

DISK EXTRA

GHOSTBUSTERS II

PROGRAM: BY ACTIVISION
FILES: GHOSTBUSTERS.DEMO

Who ya gonna? Ghost Busters! Yep, you got it. They're back. To coincide with the first UK showing of the film, Activision has put together *Ghost Busters II* the computer game. And what a scorcher it's set to be.

Just to give you a taster of what's to come, Activision has produced this superb playable demo of the game. There's almost a complete section of the game – free – for you to try out.

You're in the Vanhorne Shaft, which is jammed with ghouls and



■ Panic, me?

ghosts intent on sliming you – and the only way is down. Hold tight to your rope, don't swing too wildly and don't let anything gnaw at your life-line. Why, one wrong swing and a guy could end up with snot all over him.

You've got your trusty Slimer for a shooter and a handful of PKR Bombs. There are also shields to collect, but you've gotta swing real good to get them. You've also got an attitude problem. Not so much of a problem to begin with because you're a cocky son of a Ghost Buster when it comes to slime time. But when too much slime hits your face, you begin to wonder. You have doubts... is this what life's all about... is it worth living? The terror builds up inside you with each passing ghost. You lose your grip on reality. Ya know, you're gonna take a mighty slide if you don't hold on and keep that



■ You've either got a bad cold or you're about to be slimed.



■ Forget the straight and narrow, mate. Gimme the windy and bendy any day.



■ A PKR bomb should deal with the thing scratching at the rope.

mean attitude. Waste before being wasted. Slime before being slimed. It's simple enough, but that's the name of the game.

Hit the space bar or take a jab at your Slimer to start. To swing on your rope move left or right; to climb or descend move the stick up or down. Hit the fire button to unleash a bolt from the currently active weapon (it'll be your Slimer when you first start).

Select your weapon by hitting the space bar. You'll toggle between your Slimer, PKR bombs and shields. There's only so much a guy can carry, so don't be wasteful. There are replenishments on the way down, but once you've used them you're on your own.

PKR bombs are activated by pressing the fire button and moving the joystick up or down in the direction you wish to throw. Release the fire button when you wish to detonate the device. If you need a break from the action press P. Press ESC to quit the game.

Getting started

To run the *Ghost Busters II* demo simply insert the Coverdisk at the 'Insert Workbench' prompt. Make sure you've got a joystick plugged into Control Port 2, and hit the space bar or fire button to begin play once the demo has loaded. Remember, slime before being slimed.

£800 UP FOR GRABS!

Don't just sit there like a goon. Get your programming tools out and earn yourself some dosh. We'll accept anything, but that doesn't mean we'll use it! Turn to Page 88 to see if you've got what it takes to write software for the *Amiga Format* Coverdisk.

ON THIS MONTH'S DISK

GHOST BUSTERS II

A spectacular playable demo of Activision's spoof game about spooks and spectres. Dare you take the challenge? Sampled sounds, detailed graphics, fun gameplay... get to it!

ICONIZER

Build up a massive library of your favourite mouse pointers and simply select the desired one by clicking on its icon. You can have one pointer for the morning, another for midday, and a very special one for the evening.

ACID DEMO

Just one of the Pseudo-Ops' many demos. This one shows what can be squeezed in under 30K: thrusting sampled Acid beat and some whizzy Smiley sprites.

BRUSHCON

You're writing a machine code program and need to import graphic data into the source. You're stuck. But not for long: this useful program converts *DPaint* brushes into assembly source complete with part of the Intuition structure.

MEMGAUGE

So what if the Workbench menu bar displays the amount of memory left for data storage? Who ever looks up there? It doesn't exactly stand out. You need a real memory indicator, one that will display graphically how much memory is left.

WORD COUNT

Too few word processors come with word counts. And who's heard of a text editor with a word count? Enter WC. It does the job, and can tell you how many characters there are in the file at the same time.

INSECT LIFE



Stunning images to go with Brian Larkman's Graphics feature on Page 29.

XCOLOUR

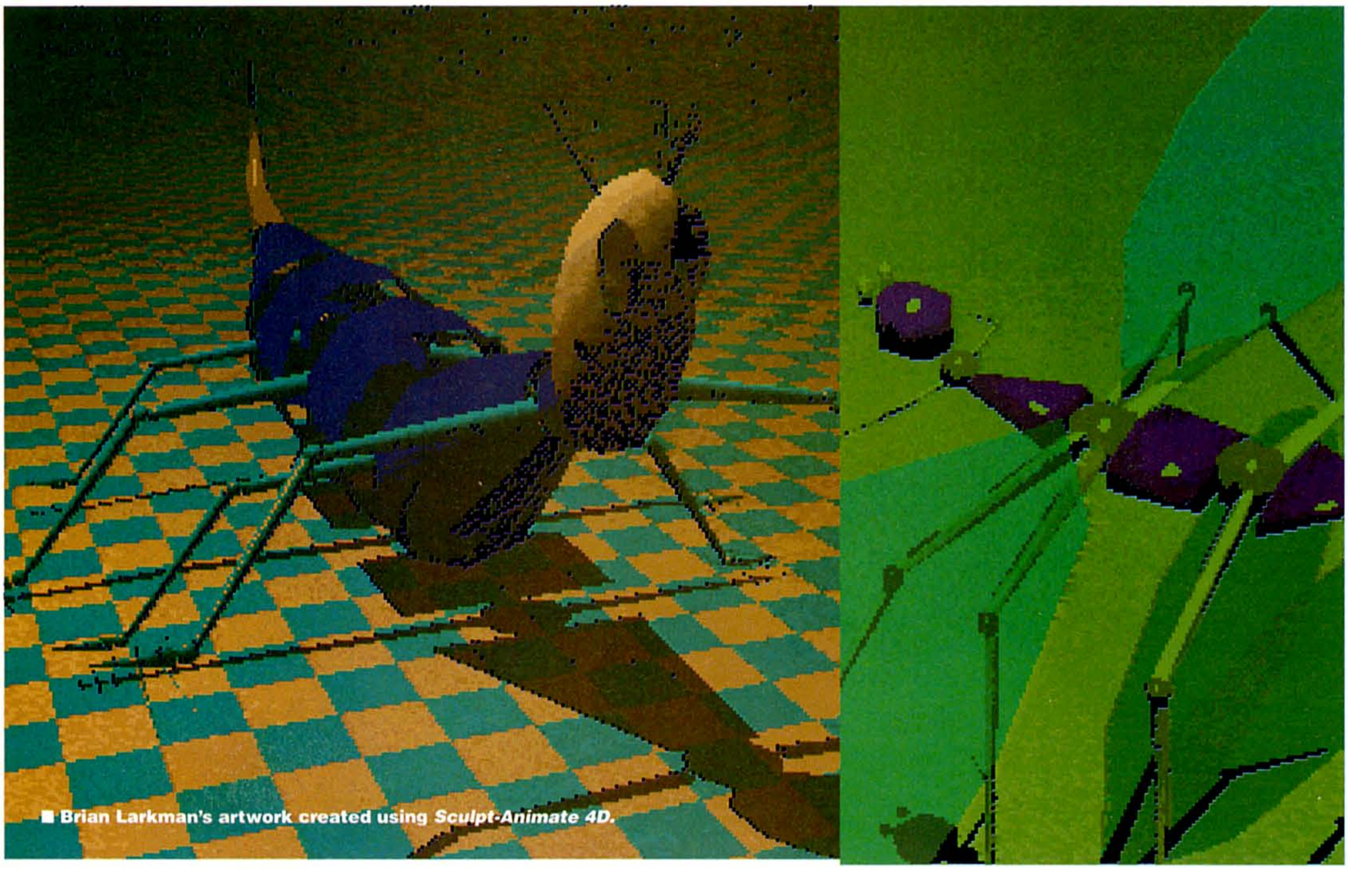
A nifty utility that lets you change the number of bitplanes and colours on the Workbench screen.

WORKBENCH HACKS

You don't seriously expect to be told what to expect, do you? Well go away then! Find out for yourself. Oh, all right. Just one clue: lefties, you'll discover something handy.

BACK UP YOUR COVERDISK IMMEDIATELY

DON'T KNOW HOW?
See Page 88, fast!



■ Brian Larkman's artwork created using *Sculpt-Animate 4D.*

ACID DEMO

PROGRAM: PSEUDO-OPS
FILES: PSEUDO-OPS ACID DEMO

A collection of Smiley sprites zoom around the screen while a pulsating Acid House beat plays. What more do you need to know?

Getting started

You don't need any instructions on how to use this one. And you're certainly not going to get a description of how to look and listen. Just double-click on the Smiley icon from the Workbench and enjoy. Hit the left mouse button when you've had enough.

INSECT LIFE

PROGRAM: BRIAN LARKMAN
FILES: INSECT2.19, INSECT2.13

You'll find two stunning 320 by 512 interlaced pictures created by Brian Larkman for the Graphics feature on Page 29, and the public domain screen slide show program *Vilbm*.

These pictures are just two of the frames from Brian's animation of a dragonfly in flight created specially using *Sculpt-Animate 4D* to illustrate this month's Graphics section.

Vilbm, of course, is the excellent slide show program which enables you to view the wonderful pixel portraits.

Getting started

Double-click on the ART drawer. Once inside, double-click on the Insect Life drawer. There are several ways of viewing the images, but only the simplest method will be described here; just double-click on the icon of the image you wish to see. In this case, it's either INSECT2.19 or INSECT2.13. Hit the left mouse button when you've had enough of the picture. Double-clicking on *Vilbm* will result in a help file. Read it if you wish to discover the inner secrets of this useful PD program.

ICONIZER

PROGRAM: PUBLIC DOMAIN
FILES: ICONIZER, ICONIZER.DOC, ARROW, BALL, OPUS

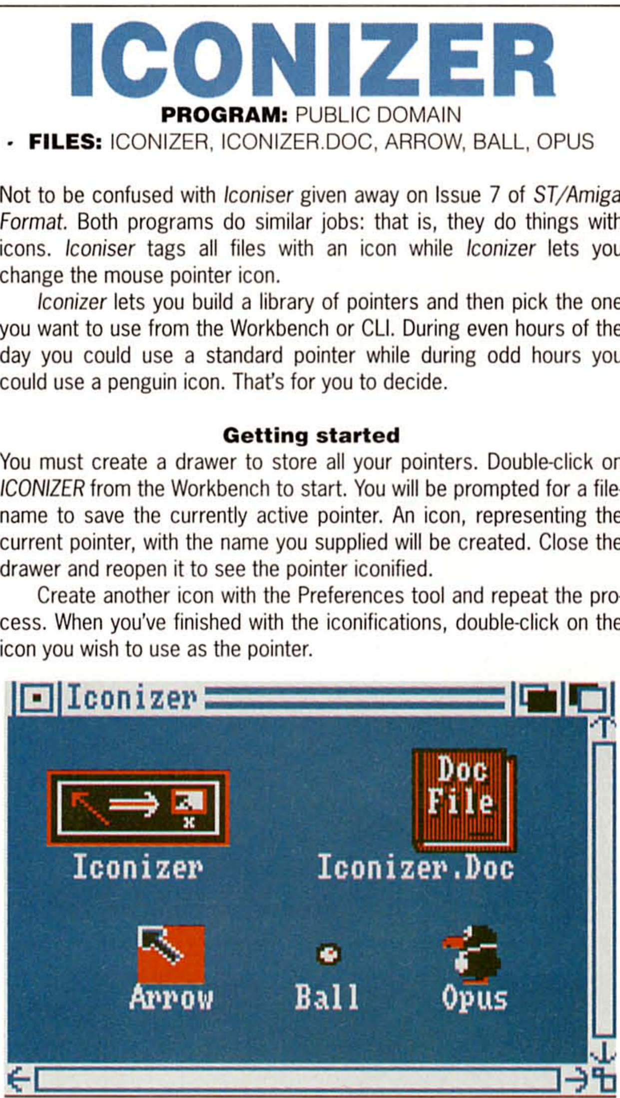
Not to be confused with *Iconiser* given away on Issue 7 of *ST/Amiga Format.* Both programs do similar jobs: that is, they do things with icons. *Iconiser* tags all files with an icon while *Iconizer* lets you change the mouse pointer icon.

Iconizer lets you build a library of pointers and then pick the one you want to use from the Workbench or CLI. During even hours of the day you could use a standard pointer while during odd hours you could use a penguin icon. That's for you to decide.

Getting started

You must create a drawer to store all your pointers. Double-click on *ICONIZER* from the Workbench to start. You will be prompted for a filename to save the currently active pointer. An icon, representing the current pointer, with the name you supplied will be created. Close the drawer and reopen it to see the pointer iconified.

Create another icon with the Preferences tool and repeat the process. When you've finished with the iconifications, double-click on the icon you wish to use as the pointer.



WORD COUNT

PROGRAM: PUBLIC DOMAIN
FILES: WC, WORD COUNT.DOC

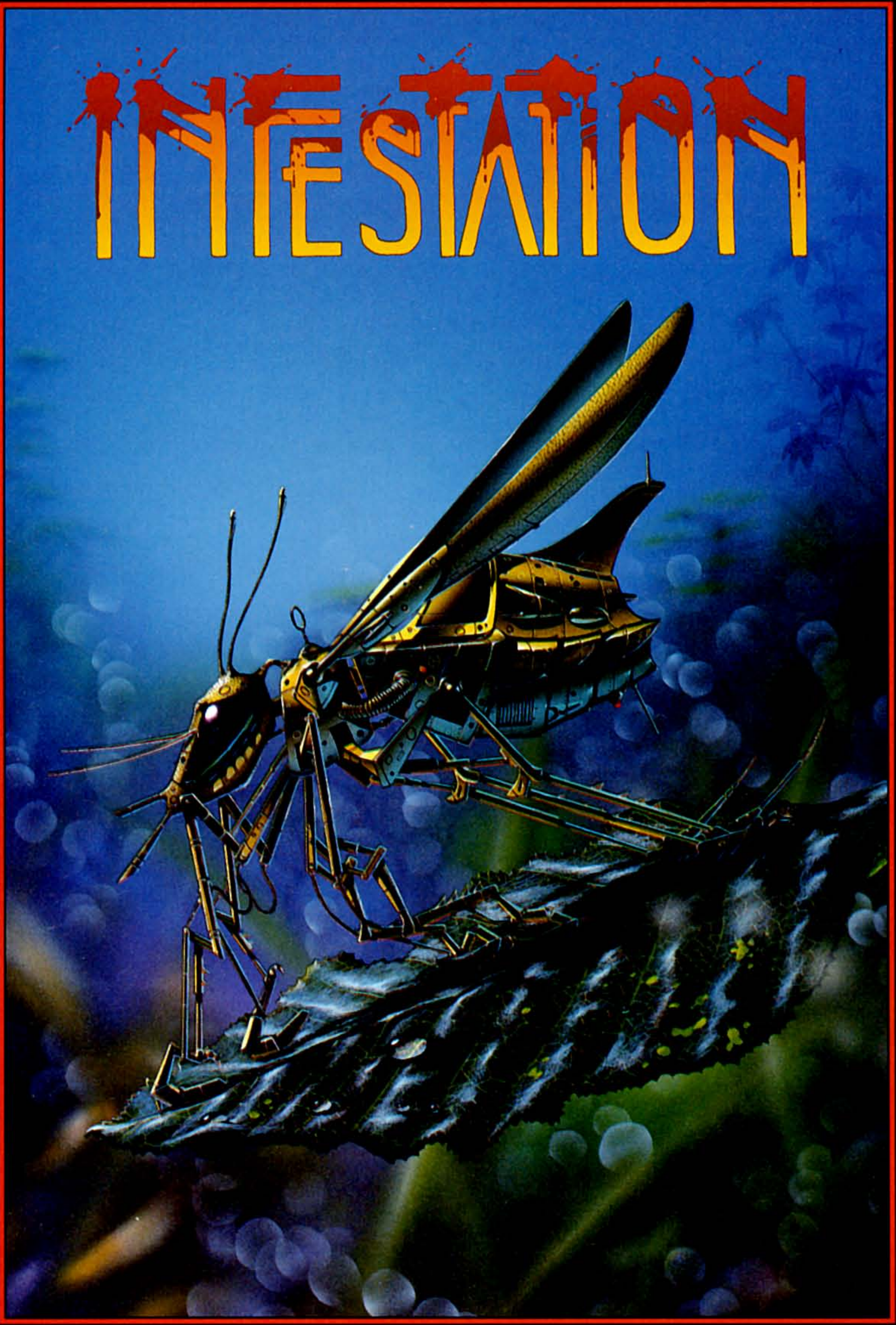
Word Count (WC) counts lines, words and characters in a text files. Boring... yawn... zzzzz. Not at all. Few word processors and even fewer text editors come with any form of word count facility. It's an incredibly useful facility to have when you need to write to length.

WC can only be run from the CLI (see Getting started to find out how to get there). It has the format 'wc –flags files' where flags is one or more of:

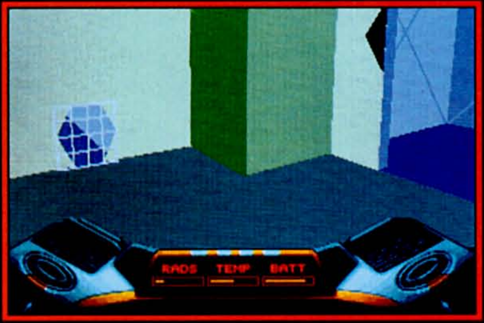
l – count lines only
w – count words only
c – count characters only

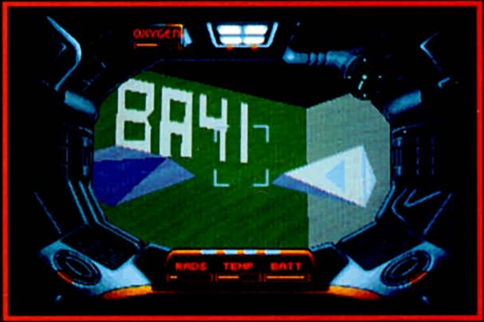
More than one flag can be specified at a time. for instance, wc –lw will count both lines and words. Entering nothing assumes everything must be counted.

WC can accept one or more filenames. If more than one file-











INFESTATION

Are you ready for a new level of realism in computer games? Are you prepared for an atmospheric experience you will never forget? Can you cope with super-fast solid 3D vector graphics? Will you venture into the unknown, alone, and armed only with a single pulse rifle? Can you overcome the INFESTATION?

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name is supplied, *WC* will display the total for the supplied files.

Examples of what you can do are as follows:

wc foo – counts lines, words and characters in the file foo.

wc boo bar – counts lines, words and characters from files boo and bar, and displays the totals.

wc –w test – counts only the number of words in the file test.

Getting started

First you'll need to get a CLI window. Do this by first replacing Coverdisk 5 with your Amiga Workbench boot disk. Click on the Drive icon so that you get a directory window. Double-click on the System drawer and then double-click on the CLI icon. Type in 'CD C' and press Return. Then type 'copy cd to ram:' and hit Return. Type 'copy endcli to ram:' and press Return. Finally, type 'copy dir to ram:' and hit Return.

Get rid of any windows on screen and then remove the Workbench disk from the drive. Re-insert the Coverdisk. Click inside the CLI window to activate it. Type 'cd df0:' and press Return. The CLI will now know there's a disk in the drive. Type 'cd utilities' and press Return. Type 'cd "Word Count"' and press Return. Now type dir and press Return. You should see the filenames Word Count.Doc, Word Count.info, wc and Word Count.Doc.info appear.

Forget about any .info files. You're only interested in wc and Word Count.Doc. To count the number of words in *Word Count's* documentation file enter 'wc –w "Word Count.Doc"' and press Return. Type 'endcli' and press Return when you've finished playing with *Word Count.*

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Flummoxed by files? Dumfounded by disks? Just plain thick? If you've got a problem with the disk – and you're sure there is no corrupted data – phone 0225 765086 with your query. State the model of your machine, version of Workbench/Kickstart you're using, and anything you've got attached to (or plugged inside) the computer. For problems with disks before Issue 5 phone Amiga Format on 0225 446034.

WORKBENCH HACKS

Three excellent hacks for you to tinker with, and try out on other people, this month. Don't worry; none of them cause any permanent harm to your Workbench.

ESUOM

PROGRAM: PUBLIC DOMAIN
FILES: ESUOM, ESUOM.DOC

Open the WB HACKS drawer and double-click on the ESUOM folder. Finally, double-click on the ESUOM program icon. Have fun with the mouse pointer. Clue: try reading backwards. A close window gadget can be clicked on to stop s'esuoM effects.

MISCHIEF

PROGRAM: PUBLIC DOMAIN
FILES: MISCHIEF, MISCHIEF.DOC

Oha la la, yo noughty little cabbages. What doe yo think yo are doeing? No hanky panky allowed wis zee little Mischief program. Yo know how to run? Double-click un WB HACKS. Du zee zame MISCHIEF wis drawers (ooh, mon dieu – vous etes terrible). Non! Zee zame wiz MISCHIEF drawer. Ah, bon. Zen double-click un zee MISCHIEF icon. Toute suite. Un to ztop zee fun double-click un MISCHIEF again.

LEFTYMOUSE

PROGRAM: PUBLIC DOMAIN
FILES: LEFTYMOUSE, LEFTYMOUSE.DOC

Are you a lefty who's tired of being discriminated against – even by your own computer? This program will force the Amiga's mouse to be ambidextrous. *Leftymouse* will make your mouse work for left-handed people by swapping the functions of the left and right mouse buttons. Your left index finger can be used for selection and your left middle finger can be used to select menus, just like your right-handed pals. Run the program a second time to restore the mouse buttons for right-handed use.

MEMGAUGE

PROGRAM: PUBLIC DOMAIN
FILES: MEMGAUGE, MEMGAUGE.DOC

While the memory indicator on the Workbench menu bar is accurate and to the point, it's also boring. Who's interested in a bunch of numbers congregating at the top of the screen?

Big deal, you know how many bytes you've got free in your machine. Do you really know what that means? Do you care? Of course not. That's why there's *Memgauge*. It displays pictorially how much room there's left in the machine for running programs.

Memgauge sits on the Workbench screen and does nothing but move an orange bar up or down in accordance to the amount of memory available in the machine. The closer the orange bar is to the letter F in the gauge, the closer the machine is to being full.

If you're not happy with *Memgauge's* size simply stretch it or squash it. Click and hold the left mouse button at the bottom of the gauge and simply move up or down the screen to taste.

Getting started

From the Workbench, double-click on the UTILITIES drawer. Once inside, double-click on the *MEMGAUGE* drawer. Finally, double-click on *MEMGAUGE.* A tool with a dynamic graphic display will appear somewhere on the Workbench screen.

XCOLOUR

PROGRAM: PUBLIC DOMAIN
FILES: XCOLOUR, XCOLOUR.DOC

With *XColour* you can change the colours of any screen and add and remove bitplanes. Even HAM and enhanced halfbrite screens can be manipulated. It's not, of course, possible to change the number of bitplanes in a HAM picture.

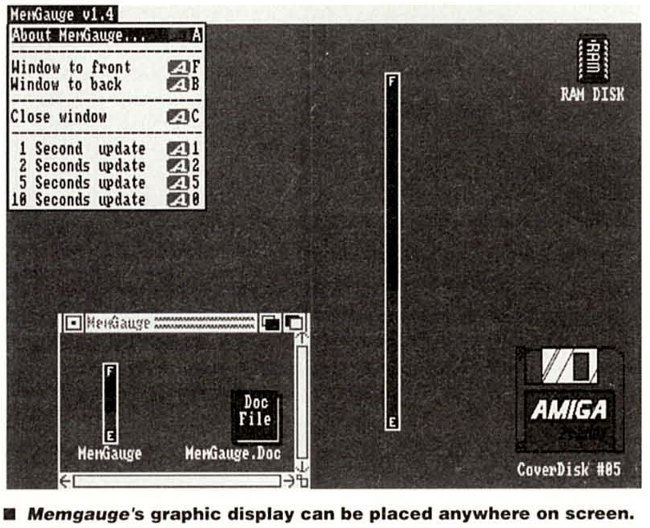
Selecting *XColour* causes a window to appear. Colours are selected by clicking on one of the colour gadgets towards the top of the window. Under the palette you'll see three slider gadgets – moving these alters the R, G and B values of the selected colour.

Icons down the side of the *XColour* window allow you to add bitplanes, subtract bitplanes, turn the colours to black and white, progressively darken the selected palette, copy colours from one part of the palette to another, exchange two colours in a palette and spread the palette's shades between two colours.

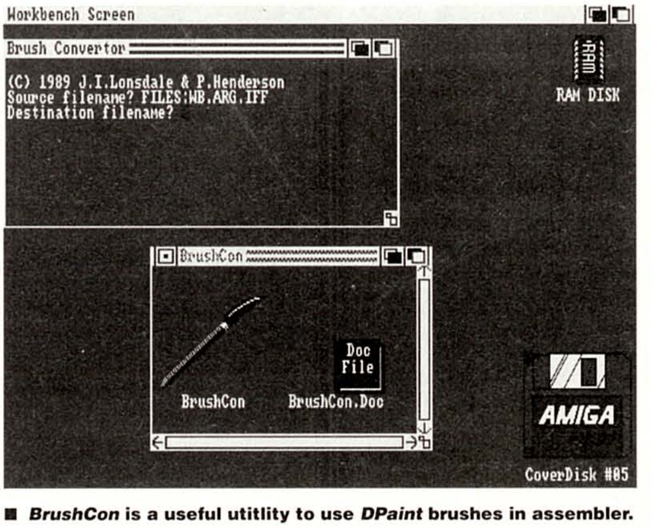
If you get into trouble – that is, can't see what the hell you're doing – press ESC to restore the previous colour selection.

Getting started

Double-click on the ART drawer. Once inside, double-click on the *XCOLOUR* drawer. Finally, double-click on the *XCOLOUR* icon. A window will appear with all *XColour's* options inside. Simply use the left mouse button to select items from within the window. Simple enough.



■ ***Memgauge's* graphic display can be placed anywhere on screen.**



■ ***BrushCon* is a useful utitlity to use *DPaint* brushes in assembler.**

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Before using your *Amiga Format* disk, you should make a back-up of the master disk as soon as possible. This is very important!

BACKING UP YOUR DISK

For a number of reasons, it is rather important to make a back-up copy of the Coverdisk as soon as possible. Copying the disk may sound like a complicated task suitable for techno-buffs only, but it is surprisingly simple provided you read the following instructions carefully:

1. First, turn on your machine and load Workbench. Once the Workbench screen appears and the disk-drive light goes out, remove your Workbench disk and insert our Coverdisk.

2. Next, click once on the Coverdisk icon and then press the right mouse-button and the Workbench menus will appear. Now, while keeping the right mouse-button depressed (you can cheer it up afterwards!), move the mouse pointer over to the 'Workbench' heading and a menu will drop down. Move the mouse pointer over the 'duplicate' menu option and then press the left mouse-button.

3. After a few seconds' disk access, the Workbench DiskCopy tool will be loaded and run. Now just follow the on-screen prompts and your *Amiga Format* Coverdisk will be copied to a backup disk. When the machine asks for the destination, insert your blank disk into the drive. Further instructions can be found in the user's guide that comes with your Amiga.

USING THE PROGRAMS

All the programs on the *Amiga Format* disk are specially set up to make them as easy to use as possible. If you can use the Amiga's Workbench then you can use our Coverdisk! If you do have problems with a program, full instructions on loading and using the programs are included in the Disk Pages and these should get you up and running. If you still have problems, you should read the documentation file (.DOC) that is included with every program. To run any of the programs on this month's Coverdisk, all you have to do is follow a very simple procedure. Unless specified differently within the Disk Pages, just double-click on the program's icon on the Workbench and the program will load and run. Full details on how to use the programs once they have run are included with the Disk Pages and also as a documentation (text) file accompanying the program.

To display a documentation file, just double-click on the appropriate .DOC file to be viewed and a window will open containing the file's contents. Pressing the space bar will advance a page at a time.

COPYING THE DISK

Unless specifically stated, the programs on the Coverdisk are not in the public domain and the copyright remains with the author. Selling or distributing these programs without the author's permission is against the laws of copyright.

IS YOUR DISK FAULTY?

We have done our best to check that the programs on the *Amiga Format* Coverdisk are simple to use, error-free and have no known viruses. However, we cannot normally answer telephone queries on using the software, and we do not accept liability for any consequences of using the programs on the disk.

If your *Amiga Format* disk is faulty – and out of the tens of thousands duplicated, some are unfortunately bound to be – you should send it back for a free replacement within a month of the cover date to: *Amiga Format* December Disk, Discopy Labs, Unit A, West March, London Road, Daventry, Northants, NN11 4SA.

If your Amiga refuses to accept the disk, try using the *DISKDOCTOR* utility on your Commodore Workbench disk to rescue it before sending it off for a replacement. Full details of *DiskDoctor* can be found in the user's manual that came with your machine.

EARN YOURSELF £800

Name ....

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My program name is..

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Approximate total size of files in kilobytes ....K (we cannot use programs longer than 200K; shorter submissions, under 100K, stand the best chance of publication). It is a:

- ☐ Game
- ☐ Technical tool
- ☐ Business utility
- ☐ Art program
- ☐ Music program
- ☐ Educational
- ☐ Novelty
- ☐ Other

BRIEF DESCRIPTION ....

....

....

....

CHECKLIST (please tick):

- ☐ Stamped, addressed envelope for return
- ☐ README.DOC explanation file on disk
- ☐ Printout of README.DOC file (if possible)
- ☐ Name, address, machine type written on label
- ☐ Disk certified virus free

IMPORTANT Please sign this declaration:
This program is submitted for publication by *Amiga Format*. It is wholly my own work and I agree to indemnify Future Publishing against any possible legal action should copyright problems arise.

Signed ....

Date ....

If you've got any programs for the Amiga which you think other readers would find useful, interesting or amusing, we'd like to know about them.

1. Make sure your program is foolproof to use.

2. Create a file called README.DOC on the disk which explains exactly how to use your program.

3. Fill in this form, sign it, and send it without delay to:

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MEGAPACKS

★ Amega Packs 1 to 10 each consist of 3 disks★
★ Amega Packs 1 to 10 cost £7.50 each fully inclusive ★

● **AMP 1**: Home Business Pack 1, RIM the relational database, UEdit the brilliant word processor, spell checkers, VisiCalc and VC spreadsheets.
● **AMP 2**: Communications Pack 1, Aterm V1.3, Star Term V2.0 Argo Term, Kermit Term loaded with features: Xmodem, WXmodem, autodial, 300-9600 baud rate, macros and many more! Also a list of BBSs around the world.
● **AMP 3**: Graphics Pack 1, CAD Design, Ray Tracer generator, fully featured drawing programs, Amiga MCAD, loads of picture format converters,and other utilities.
● **AMP 4**: Animation Pack 1, stunning graphic animation demos including Archimedes Cradle, F-15, Rocker, Clown, Lockon, Marilyn, Sunglasses, TBAG 3D, Elgato the walking cat, Red Baron and others.
● **AMP 5**: Picture Pack 1, packed full of the best Amiga pictures.
● **AMP 6**: Demo Pack 1, Thames TV demo, The Juggler, loads of bouncing Boing demos, Jungle Command.
● **AMP 7**: Amiga Basic Pack 1, games, utilites, demos, loads of excellent programs.
● **AMP 8**: Game Pack 1, Empire, Gravity Wars, Othello, Pacman, Clue, Cribbage, Back Gammon, Yahtzee, Missile Command, 3D Break out and many more.
● **AMP 9**: Picture Pack 2, packed full of the best Amiga including some NASA digitised pictures.
● **AMP 10**: Demo Pack 2, excellent graphics & sounds: New Order Blue Monday digitised sound demo, Ian 'n' Mick and the DOC demo.

★ Amega Packs 11 to 20 each consist of 5 disks ★
★ Amega Packs 11 to 20 cost £12.50 each fully inclusive ★

● **AMP 11**: Sonix Music Pack. Includes the PD player for Aegis Sonix music program and 4 disks full of music scores.
● **AMP 12**: Miami Vice sampled sound demo of the Miami Vice theme.
Excellent graphics and sound.
● **AMP 13**: Demo Pack 3, Einstein, Bruce & Bongos, Anti Trax 2010,
Digi Tech and Share & Enjoy demo disks.
● **AMP 14**: Demo Pack 4, Sanx, Sanxim, Mark II, Action! and TECHtech demo disks.
● **AMP 15**: Demo Pack 5, Needs two disk drives, New Tek, Pophits - sampled sounds of Pet Shop Boys, Madonna and other pop groups, disk of sampled sounds including Star Wars, Mr Spock etc. and Beatles music over great graphics - Killer Demo.
● **AMP 16**: ABasic Pack, Games, Utilities, demos etc. includes ABasic.
Note: ABAsic is not Amiga Basic.
● **AMP 17**: Utility Pack 1, Printer Driver Generator, Fonts and Font Editor, Floppy disk utilities, disk copiers, clocks, calendar, directory lister, Virus Checker and other utility programs.
● **AMP 18**: PD Experience!, a mixed bag of public domain utilties, graphics, demos etc. all disks from the Tampa Bay Amiga Group all auto loading and very easy to use! Simply place disk in your Amiga and turn on! Excellent.

APPLICATION DISKS

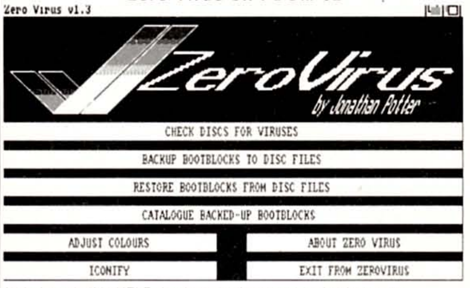
● **AMP 19**: Utility Pack 2, Icon utilities, Mouse pointers, printer drivers and fonts, SCReen IMage to PrintER, PopCLI and loads of brilliant utilities.
● **AMP 20**: Picture Pack 3, Needs two disk drives, 5 disks of brilliant HAM and low resolution pictures. All auto loading.

● **FFISH 189** - UEdit V2.4g the excellent word processor.
● **FFISH 176** - AnalytiCalc V23.2a of the large and powerful spreadsheet. Requires 1Mb RAM and 2 drives.

UTILITY DISKS

● **FFISH 143** - RIM V5.0 is a Relational Information Manager, a fully relational DBMS that is suitable for very large databases using B-Tree data storage. Versions of RIM run on a variety of micro systems both small and large, and produce compatible databases.

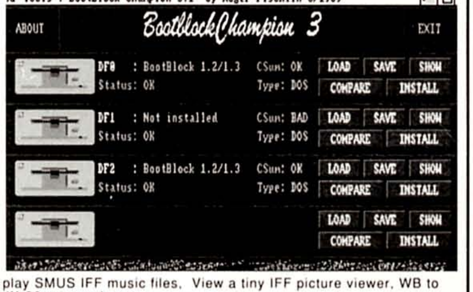
Zero Virus on PDOM 62



Includes a builtin HELP database and a programming language.

● **PDOM 62** - The Public Dominator Anti Virus Disk: Virus X V3.2b, VCheck V1.2 (for memory), VCheck V1.9 (for disk drives), Zero Virus V1.3 the fully integrated virus detector and killer. Also Boot Block Champion the utility.
● **PDOM 59** - Amateur Radio Disk: StarTerm V3.0, P81 and P1027 2 packet terminal programs, TA Term V5.0, a HAM Database for the Amiga Amateur Radio Group, Morse Code, Satellite Tracking and loads of HAM utilities. A real must for the serious HAM user.
● **FFISH 243** - FragIt V2.0 is a dynamic memory thrasher! ImageLab V2.2 is an IFF pictures manipulator. LPE V1.0 is Latex Picture Editor for the LATEX system. NoClick V3.5 stops the disk drive clicking if there is no disk in the drive. PassWord V1.21p you specify the password for your system security. Pcopy V2.0 the excellent disk copier. SimGen adds a 2 or 4 colour picture to your WB screen. Warp V1.11, UNWarp V1.0 and WarpSplit V1.1 - WARP reads raw filesystems and archives them into a normal file.
● **FFISH 213** - Bitplanes the 8 colour icon user and 300 8 colour program icons!
● **FFISH 188** - Boot Intro V1.0 displays a scrolling and a still message of your choice at boot up. DiffDir V1.0 compares 2 directories. FracGen V1.23 fractal generator a real fully featured fractal program.
● **FFISH 168 and FFISH 169** - The Matt Dillion disk special includes loads of utilities and source: Config V1.0, Clock V1.0, DME V1.31, DMouse V1.1, Backup V2.01, SUPLIB, LIBREF, DRES V1.0, DASM V2.11, FILES V1.2, SHELL V2.1, FINDIT V1.0, LIBS V1.0, SCAT V1.0, ADDCR V1.0, REMCR V1.0 and CMP V1.0. You will need both disks @ £3.00 each.
● **FAUG 41** - Rain Bench, Amiga Arc V0.2 compatible with ARC V5.0.
● **Virus X V3.2.** The virus killer that sits in memory and checks disks as they are entered.
● **AMICUS 22** - Printer Driver Generator V2.3, Show Print II.3 IFF screen dump.
● **FFISH 158** - DiskX is a sector based disk editor, MemBoardTest V2.4, MSDOS V0.1 lists files c written in standard MSDOS or ST format, then copies them to RAM then rewrites to disk in AmigaDOS format, PCBTool V2.6 is an early version of PC Board layout program that does not support printers, ScreenX is a small clock/memory counter, TaskX V2.0 is a 'realtime' task editor,.
● **FFISH 157** - XIcon V2.01 allows you to call up scripts containing CLI commands from an icon.60 or 80 toggles 60/80 column text, BootBack is a disk boot block save/rewrite and copy program, ECPM is a CP/M emulator.
● **FFISH 145** - Dmouse V1.06 is a versatile program that includes screen/mouse blanker, auto window activator, mouse accelerator, popcli, pop window to front, push to back etc.
● **FFISH 131** - DFC is a disk copier that multi-tasks, Hyperbase V1.6 is a database management system, Mackie is a PopCLI replacement, Micro Emacs VMg1b the text editor.
● **FFISH 130** - DirMaster V1.1 is a disk cataloguer, Hp V1.0 a nice RPN calculator which supports calculations with binary, decimal, hex float & complex numbers, Mach V1.6a the mouse accelerator.
● **FFISH 129** - DosKwik a pair of progs which allow you to save files or groups of files to one or more disks for quick loading, MRBackup V2.0 and V2.1 a hard disk back up utility.
● **FFISH 69** - Spool V1.2 : a queue manage, printer driver and SPOOL requester and Wc a file word counter. Asm68K V1.0.3 fully featured macro Assembler, Blitlab a blitter exploring program in C Conman V0.9 a sort of CLI shell, Dk decays the screen bit by bit, Frags displays memory fragmentation by listing the size of free memory blocks, Icontype changes the icon type, MonProc monitors processes for packet activity, MouseClock turns mouse pointer into a digital clock, Spew generates News of The World type headlines, Sb a sytem browser.
● **FFISH 65** - Sunmouse V1.0 automatically clicks in windows when the mouse is moved over them, RunBack starts programs from CLI allowing CLI window to close.
● **FFish 55** - ASDG-rrd a RAM disk that survives reset, BigView displays any size IFF picture, EGraph creates graphs from X,Y pair text files. Hyperbase V1.5 a neat database management system, MemClear Zero fills free memory, NewZap V3.0 disk sector editor, Rainbow makes Workbench background a rainbow, 2 Smusplayers to

Boot Block Champion on FFISH 244



play SMUS IFF music files, View a tiny IFF picture viewer, WB to JX-80 screen dump.
● **FFISH 244** - BBChampion V3.1 the Boot Block Champion load, save and analyze boot blocks. BootIntro V1.2 you specify The headline text of upto 44 characters and the scrolling text of upto 300. FMC V1.2 is a no fast memory program. SizeChecker V1.0 uses a list of file sizes to check unexpected file changes. TextDisplay V1.52 the great text display that handles all screen formats. XColour V1.2 the screen colour setter.
● **FAUG 67** - Disk X V2.0 the sector editor, Hand Shake V1.06b a VT100 terminal emulator, Pack It a whole disk compressor.
● **FAUG 62** - Access! V2.6 very powerful telecommunications package. Hide II allows you to turn off and on your RAM expansion. Cron - runs a table of background tasks. Add Icon V1.0 adds icons to files without icons, IFF Mirrors is an ILBM slide show with X and Y mirroring, FFormat V1. a fast formattor.
● **FAUG 50** - Dir Util V VI the disk manager, Roll Back V1.0 rolls back text that has rolled off the top of the screen, Short Cut allows you to define text to a single key stroke. thus CLI commands are simplar to type.
● **FAUG 47** - FunKey assign any text string to a function key.
● **PAN 25A** - Disk Wipe very quick disk contents wiper, SELECT allows you to select in your Startup-Sequence from a number of scripts, Virus Check V1.1.
● **PAN 19D** - ZOO V1.42a a very good file compressor, Con Man V0.99b provides line editing and command line histories, Distinguish type of files with File Type, Pipe Handler, Pop CLI V3.0.
● **PAN 17B** - AmiGazer 1573 stars to view any time, date or lattitude CLI only, Date Book the diary, bind any text string to a function key, use CLI from a menu, a disk cataloguer Lightning Logger V1.2.
● **APDC 18** - Floppy Disk Utils: Quick Copy V1.0, Disk Mapper, Disk Salvage, Virus check, System Utils: Blitz V1.0 text editor, TimeSet,

DEMO DISKS

This stunning picture is from FFISH 196



ACalc calculator Amiga Monitor V1.1, MeM Grab fast memory grabber. DirectoryMaster V1.1
● **APDC 15** - Icon utilities: full of icon files and creators. Some animated! Brilliant disk for icon manipulation.
● **AMICUS 24** - Sectorama - disk sector utility, Iconize V1.0 reduce a full screen pic to an icon, BMon system browser, Virus Check v2.21 checks disk & memory, Boing Machine.
● **FFISH 198** - CHARON requires 1Mb RAM. It an animated version of the 1915 book by Lord Dunsany. Absolutely stunning graphics.
● **FFISH 196** - Stunning digitised HAM pictures. Excellent! The quality is astounding.

● **PDOM 01** - The Walker Demo I is a mega animation demo that requires 1Mb RAM.
● **PDOM 02** - The Walker Demo II the mega mega animation demo that requires 1Mb RAM.
● **PDOM 06** - The Mahoney and Haktus sounds of the knome music disk II, great graphics and mega sounds. With a bouncy mouse pointer

GAME DISKS

and things flying evrywhere. A really good demo with loads going on.
● **PDOM 40** - Northstar Fair Light mega demo III a 2 disk set of incredible demos! Needs PDOM40 and PDOM41. Including Mahoney and Kaktus with Blue.
● **PDOM 41** - See PDOM 40 for details.
● **PDOM 42** - DeathStar Blasting II - Enlightment demo a 2 disk set of mega mega good demos. Needs disk PDOM 43.
● **PDOM 43** - See PDOM 42 for details.
● **PDOM 44** - The Walker demo. This is the original 2Mb RAM, 2 Disk version. It is absolutely stunning! The 1Mb RAM version is on PDOM1. Also needs PDOM 45.
● **PDOM 45** - See PDOM 44 for details.

● **FFISH 194** - Moria V3.0 the single player dungeon simulation adventure game. Requires 1Mb RAM.
● **FFISH 205** - Bally the arcade game, Battle Force V3.01 simulated battle between 2 robots, Chess V2.0.
● **SOFT 042** - Chinese Checkers excellent version.
● **SOFT 068** - Clue as in Cluedo, Othello, Klondike, Canfield and Cribbge.
● **SOFT 078** - Pac Man. Great implementation of the classic game.
● **SOFT 117** - Empire, Gravity Wars, Hanoi, Hockey, Bikoff,

GRAPHICS DISKS

Jackland, Othello Master,Pacman, all brilliant PD games.
● **SOFT 118** - Amoeba Attack, Lander, Gravity Attack, World text adventure and Bullrun a battle simulation.
● **PAN 29B** - Amoeba space invaders, CosmoRoids, Stone Age a Boulder Dash type, Back Gammon, Chain Reaction, Master Mind, Reversi, Black Jack, Crazy Eights, Klondike, Jig Saw, Keno, YachtC, Daleks and Ratmaze.
● **SOFT 042** - Chinese Checkers excellent version.
● **SOFT 117** - Empire, Gravity Wars, Hanoi, Hockey, Bikoff, Jackland, Othello Master, Pacman, all brilliant PD games.
● **SOFT 069** - Backgammon, Yahzee, TVision, Missle Command, Cosmo 2 and 3D Breakout.
● **SD 21** - Monopoly.

LANGUAGE DISKS

● **FAUG 42** - DBW Render a very good Ray Tracing utility.
● **SOFT 123** - Amiga MCAD V1.2.2 excellent Computer Aided Design package.
● **SOFT 022** - Disk Full of graphic utilities: Clip It! clip any part of the screen and save to disk, Filter Pics manipulate pictures with enhancers, edge definition, colour and size shifters, plus loads of excellent packages
● **SOFT 013** - Mandelbrot Explorer. Excellent full features mandelbrot designer.
● **APDC 13** - VDraw V1.19 brilliant painting program, Ray Tracer Generator, MCAD V1.2 an object-orientated drawing package, IFF to pieces jigsaw program, ROT 3D drawing program.

● **FFISH 171** - Sobozon C a port of the Atari ST version of this full K&R C compiler, assembler and linker. If has been tested on an A2000 and appears to work well. Not for the beginner due to lack of disk info.
● **FFISH 193** - Zc V1.01 modified version of the Sobozon c compiler from disk FFish 171. It now generates code compatible with A68k assembler and has a front end to allow easier useage.

Most of the disks in this advert actually contain more files than is listed,The ad also only shows a small portion of our catalogue, we have in stock TBAG, AMUSE, APDC, FAUG, Panorama, Amicus, Slipped Disk and ALL Fred Fish and our own PDOM collection. So for details of the service and a free copy of the 44 page bumper catalogue send a Stamped S.A.E. (If you are ordering you will get the latest catalogue). ALL individual disks are £3.00 each for 1 to 5, £2.75 each for 6 to 10 and only £2.50 each for 11 or more!

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Access



PD UPDATE

The Amiga certainly isn't short of its fair share of quality PD software. Make sure you order yours today. It's more or less free. And there's plenty of it to choose from. **RICHARD MONTEIRO** checks out the best public domain software.

COMIC ON A DISK
GTS

Computers have often been the subject of comic strips so it seems only fair that a comic strip should appear on a computer. *Nemesis Prologue* is the title of the comic and it stars a semi-



■ **Who says comics need paper?**

human killer. There are 12 'pages' to the comic and each is made up of several frames of the strip. The pictures are in all in high resolution interlace mode and accompanied by a musical soundtrack.

Once you've read the strip it's of no use to you, but then the same is true of most comics. In years to come, however, it could become a collectors' item like some of the old Marvel comics. Or perhaps not.

SIMGEN
Fish 243

Very nice! *SimGen* displays a two or four-colour IFF picture in place of the standard single-coloured Workbench screen. If the IFF image is digitised, it looks like a genlocked display; hence the name *SimGen* (SIMulated GENlock).

SimGen adds one or two bit-planes to your Workbench screen and loads the specified picture into the unused bitplanes. Colours are set to finish off the effect.

Any Workbench screen configuration will work, including interlaced and overscan resolutions. Workbench hacks like *DropCloth* and *DropShadow* won't work. Nor will 8- or 16-colour Workbenches.

Although there will be more than four colours on screen when *SimGen* is running, Workbench will be fooled into thinking it still only has four to play with.

SimGen certainly brightens up the dreary Workbench screen.



■ **Just three samples of the kind of artwork your Workbench can display with the aid of *SimGen* from Fish Disk 243.**





COLOUR WINDOW
Fish 238

Using *Colour Window* you can control the colour assignments of any of Intuition's custom screens. *CW* achieves this by opening a control window (or colour window) on the currently active screen. The colour window can be opened on any Intuition screen which is either low or high resolution; laced or interlaced; one, two, three, four or five bit planes.

The control window contains a colour gadget for each colour register used by the screen. The gadgets are located at the top of the window. One of these is always active and is recognisable by a larger gadget image.

Three proportional sliders adjust the red, green and blue content of each colour. If you care for the unexpected, a random colour selector will keep you happy.

3D EXTRAVAGANZA
GTS

It's time to fish out those 3D glasses again or hunt for a couple of pieces of coloured plastic. *3D Extravaganza* uses the age-old technique of two images, one blue and one red, to create the illusion of 3D. It worked in the cinema, so why not on the Amiga?

The disk contains two games and a picture. The picture portrays a hawk glaring out of the screen with its beak poised to tear your eyes out. Peer at it without the glasses and it looks like a picture taken by a drunken photographer with an empty beer bottle lens.

A 3D variation of *Breakout* is the first of the games. Rather than just moving the bat from left to right, you move it in and out of ▸

the screen as well. Bizarre! The blocks you have to destroy are positioned on three of the walls and the ceiling. Like normal *Breakout* you lose a life if the ball passes your bat.

Orbit 3D is the second game. Here you're in orbit around a black hole with your mothership nearby. Your objective is to survive for as long as possible by destroying objects heading for the mothership. Naturally you have to steer well clear of the hole.

Both games fall far short of Format Golds, but the novelty value of playing in three dimensions makes them worthy additions to your collection.



■ **A mess? No, a 3D picture!**

TBAG 29
GTS

Another offering from the Tampa Bay Amiga Group. This one provides you with an assortment of puzzle games and utilities.

There are five games to tax your mental prowess: *Black Box, Concentration, Tower of Hanoi, Poker* and *Sliding Block*. *Black Box* is a simple game in which you have to track down atoms in a grid, by clicking on squares. If there's an atom inside it's revealed for all to see and if it there isn't you carry on trying.

Concentration is a memory testing game in which you have to click on blocks to reveal pictures. The images remain on screen for a few seconds before disappearing. If you find the matching symbol with the second choice then the blocks vanish to show you part of a word. Ultimately you have to guess the hidden word in as few goes as possible.

The *Tower of Hanoi* must be one of the oldest puzzles around. You have a pyramid made from six progressively smaller rings. The rings are all on the left pole of a set of three, and your aim is to move them to the right-hand pole. Sounds simple, but you can only move one ring at a time and can't place a large ring on top of a smaller ring. Confused?

Poker is a version of the classic card game. Surprisingly enough it's not strip poker (sorry Jason, not one for your collection).

Finally, there's the age-old sliding block puzzle. You have to rearrange the 15 numbers in the four by four grid so that they read correctly from 1 to 15.

Among the utilities you'll find yet another virus killer and a chemical periodic table. The periodic table is an invaluable aid to any chemistry student. Not only does it show the table in full, but it also stores lots of information on each element. Just click on an element's chemical symbol and you're told its name, atomic weight, electronic configuration, density, melting point, boiling point, oxidation states and much more. No Amiga-owning chemistry student should be without it.

POSTCARD
FAUG 76

Here's a neat little toy, and a useful one too. Amiga *Postcard* is Tim Holloway's answer to Apple's *Hypercard*. It's called *Postcard* because it operates on single cards and doesn't support stacks. But don't be put off; it's surprising what can be done with one card.

You build one or more cards using a program called *MakeCard*. *Postcard* creates a screen containing the background image overlayed with various gadgets. Actions can be associated to each of these gadgets (in this case, text strings). Clicking on the assigned gadget carries out the action. It's that simple!

SACC 23
GTS

Mouse pointers are funny old things to begin with, but you soon yawn at the sight of them. Wouldn't it be good if you could have an animated pointer of, say, a fish, or perhaps even an erupting volcano? It just so happens that *SACC 23* can help you out with your pointer problems. Pointer conversion is achieved with a nifty program supplied on the disk. The animated pointer operates just like a normal pointer, but is much more fun to watch.

There are a couple of games too and some fun graphics demos, but the best program is definitely the one allowing you to mess with the mouse pointer. Gimme the fish any day!

TOP TEN PD
GTS Title

1 **FISH 215**
2 **MEGA GAMES PACK II**
3 **TBAG 26**
4 **STAR TREK**
5 **TBAG 29**
6 **HOME BUSINESS PACK**
7 **TBAG 16**
8 **TBAG 31**
9 **FISH 196**
10 **DESIGN FACTORY**

TBAG DISK OF THE MONTH 21
GTS

Every now and again the Tampa Bay Amiga Group puts together a disk with some of the best programs in its vast collection. Disk 21 happens to be one of them. And it's crammed with goodies.

BIGSCREEN
Fancy being able to specify the size of the viewable Workbench screen? With an Amiga 1080 monitor in NTSC mode the maximum you can see is an extraordinary 704 by 240. Yes, wow! A combination of screwdriver buffoonery and software drollery will get you a super high resolution screen.

HERMES' CONTURA
This is a beautiful graphics program that creates the contours of 3D functions of the type Z=F(X,Y). It is of interest to scientists and engineers as well as painters and designers. *Contura* can be used to produce abstract paintings and design patterns.

HERMES' CYCLER
IFF-ILBM pictures can be displayed and colour cycled with this one. Resolutions with eight, 16 or 32 colours can be used. Pictures with less than eight colours, or more than 32, cannot be cycled.

JSHOW
Yet another picture slide show utility. This one is rather neat as it bounces the image from top to bottom of the screen until finally coming to rest. Simple things...

TILES
It's worth getting this disk just to play *Tiles*. What a wonderful game. Yeah, sure it's been mentioned before, so why haven't you got it? And why are you reading this if you have got it? *Tiles* is similar to Activision's *Shanghai* except much simpler and much prettier. A board filled with tiles presents itself: the object is to find matching pairs of tiles and get rid of them by clicking on them both.

PEEL
Here's a program which takes a 320 by 200 IFF picture and peels the image off the screen. The effect is breathtaking. Imagine removing a transparent sticker from something and being able to see the image on the reverse of the sticker and you get the something of the idea.

SHOWFONT
Trying to discover what all the characters in a font look like can be a tedious task when you've got the likes of *FontEd* or (cough!) *NotePad*. *ShowFont* lets you see quickly and painlessly all 256 characters in a font.

TEXTED
Countless words have been spent on *TextED*, and rightly so: it's a damn good text editor for a freebie. MKSoft *TextED* is based on the powerful Unix text editor called *EMACS*. So many of the keyboard commands are very much the same.

VSCREEN
This one allows you to have screens larger than the actual display area of your monitor. The larger, virtual, screen scrolls when you move the mouse off the visible section of the screen. Very useful indeed.



■ ***Tiles* is a subtle strategy game, loosely based on *Shanghai*.**

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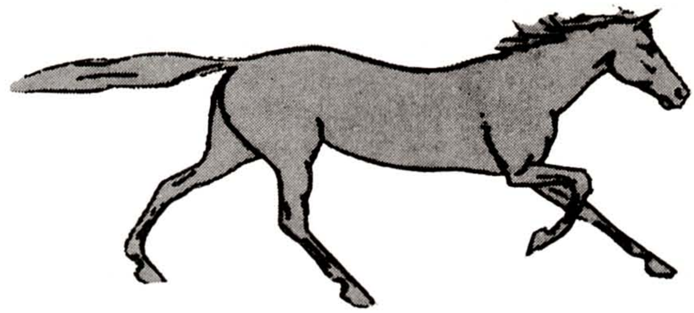
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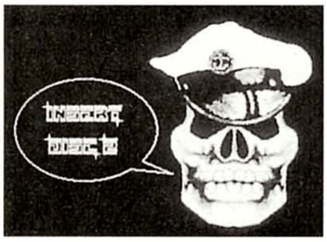
DEMOS CORNER

A handful of mean and moody demos to show off your Amiga's capabilities.

RED SECTOR MEGA DEMO 1

17Bit 503/504

This bumper bundle of demos, which range from unsavoury worms to dynamic balls, comes on two disks. In all there are six demos. The worm is real cute: he slithers onto the screen making cute noises. Unfortunately he makes a rather rude and loud noise when he gets to the middle of the screen, and hurriedly departs to leave the smell behind.



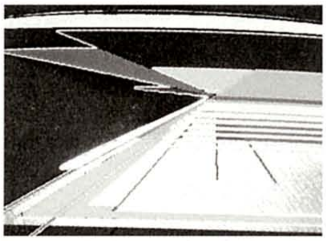
■ One of the many fabulous and freaky pieces of the Red Sector Mega Demo. Get that Disk 2!

By far the most impressive of the demos is the last one which features a mass of balls moving around the screen and forming all sorts of strange patterns. They range from abstract shapes to animals, helicopters and of course people. If only the people that code the demos could get together with some games designers, there would be some truly spectacular games on the shelves.

HAMMMM2

Fish 239

What was Phil Burk on when he created this demo? *HAMmmm2* is an update of *HAMmmm*. And is very strange. *HAMmmm* displays lines or boxes whose end points bounce around the screen. The screen is a double-buffered HAM affair. The Y positions of the points are continuously copied into an audio waveform that is played across all four Amiga sound channels. The pitch of a just-intoned chord is derived from the average X position of these points. The result? Weird...



■ How did he get that? You simply pile the average of the z axes into a screen widget...

17BIT ARTWORK

17Bit Disk 490

At last, an excuse to print some pretty pictures. The images you see below are from 17Bit's first disk in a series of stills produced by graphic artists. *Tree Frog* and *Dusky Mouse* (16-colour pictures) are by Dutchman Henk Van Der Graaf while Rico Holmes is responsible for the *Joker* and *Mariano Fortuny*. Presentation is very slick with a tune accompanying the slide show.

MUSIC MAESTRO

If you're into a bit of hip hop, house or rock on your Amiga, then the following disks are for you.

POWER SURGE

17Bit Disk 506

A collection of 14 music tracks put together by Mik and Bilbo. Pump up the volume and let it run.

MOVIE

17Bit Disk 513

Sit back and watch the computer play *Sculpt-Animate 3D* animations. Why bother with gymnastics when your Amiga can do them so much better? And, at what cost to you? A few mouse clicks. Just look at the perfect movements, delicate balancing, sweaty armpits...

THE AMIGA CHART III

17Bit Disk 507

Superb sampled music from Queen (Invisible Man) and Black Box (Ride on Time). Impressive.

RAF MEGADEMO

17Bit Disk 510

A great selection of tunes on two disks showing what the Amiga's sound chip can do. The Ghost Busters II track is very good.

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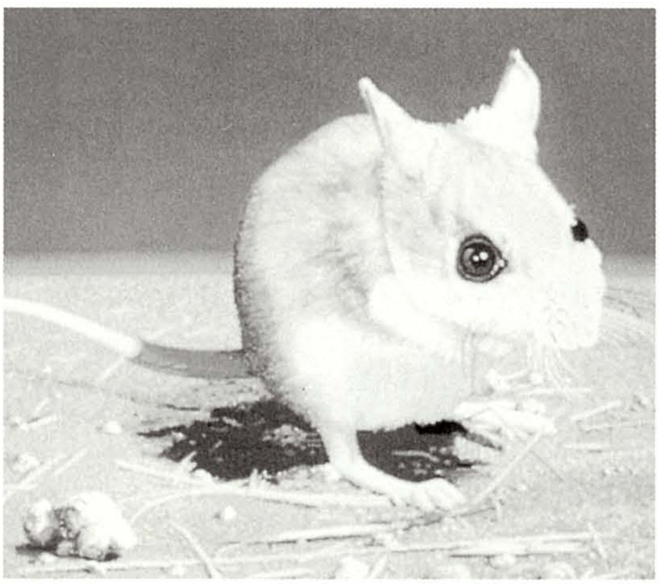
17Bit Disk Nos

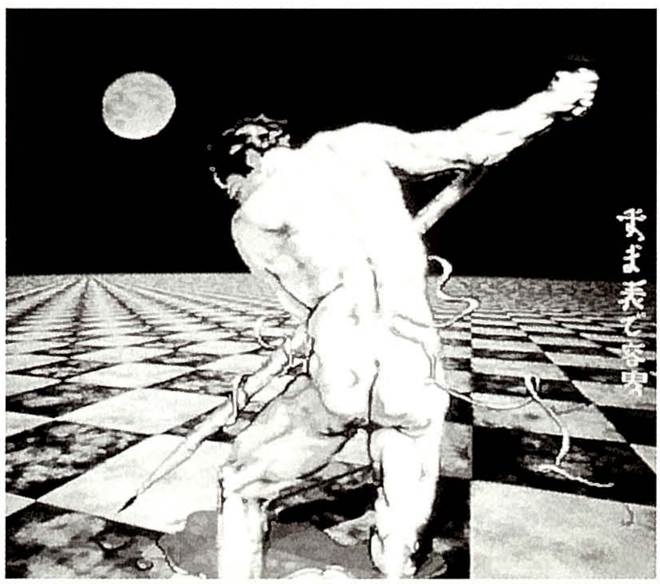
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■ From the *17Bit Artwork* disk come these two fine examples: *Dusky Mouse* by Van Der Graaf and *Mariano Fortuny* by Rico Holmes.

Announcing PRODATA – the Arnor database

Software for the 1990s

Arnor, the makers of PROTEXT, are pleased to announce the arrival of our complementary database program, PRODATA.

This is the program that our customers have been requesting for years. Prodata is an ideal companion to Protext - it uses the same key strokes and many of the same concepts, so Protext users will immediately feel comfortable. Prodata offers the same standards of ease of use and flexibility as Protext.

But you do not need Protext to use Prodata - it is a powerful database manager in its own right, ideal for all your filing applications. The program uses a simple set of menus which may be used with the keyboard or a mouse, as required.

Prodata is being launched simultaneously for the IBM PC and compatibles, Commodore Amiga and Atari ST, at a special introductory price of £55, available only until 30th November 1989. The recommended price will then become £79.95.

Variable length fields, up to 300 fields per record. Data files automatically extended as data is entered. Extra fields may be added at any time.

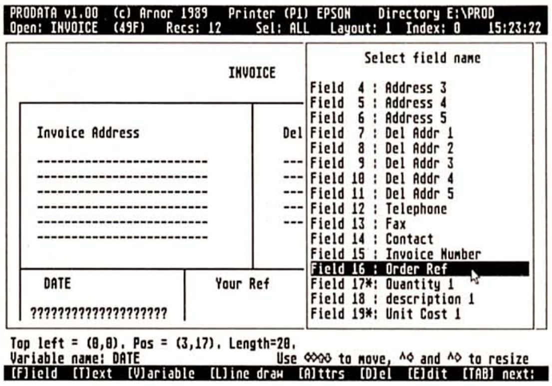
Indexed files may have up to 5 indexes, which may use supplementary sort fields. Instantly switch indexes to change sorting method.

Flexible layout design includes field, text and variable items, line drawing mode for boxes, layouts wider and longer than screen sizes with automatic scrolling, formatting of items (decimal places, justify, centring), printer attributes (bold, italic etc) both global and on each item, special 'attach' attributes to join items. Duplicate layout facility. Up to 100 different layouts.

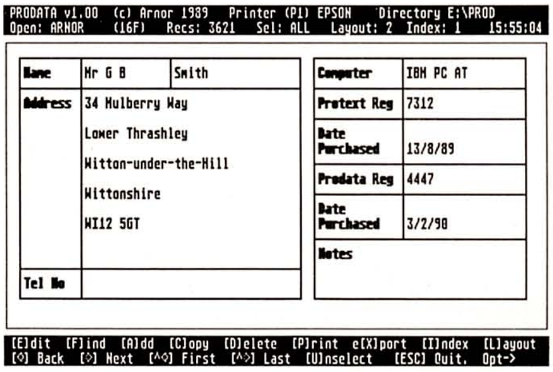
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Filtering of data using any expression. Filters stored with descriptions, selectable from menu. You can instantly switch between displaying all records, those selected, or others. Individual records may be de-selected after filtering.

Importing and exporting of data in different formats suitable for other software including Protext. Selective importing allowing data to be checked and altered as it is imported.



Designing a new layout



Displaying and entering data

Prodata is exceptionally versatile:-

You can keep data files which are automatically sorted as you add information. The type of data can be very varied, ranging from simple names and addresses to inventories and catalogues and even invoices and records of transactions.

You can keep the data sorted in several different ways, e.g. by name, number, date. Almost instantly find information using any of these sort keys.

You can design different ways of presenting the data, e.g. straight list, address labels, tabulated data.

Using Prodata is simplicity itself :-

All facilities are accessed from a few simple to use menus. To set up a new database file you merely need to enter names for each data field - you need not concern yourself with the size of fields or the type of data to be stored or even the total number of fields.

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Data entry verification. Fields may be required to be integer, number or date within a given range, or a string subject to a maximum length and mask.

Data editing with ability to duplicate an existing record, insert and overwrite mode, insert and delete line that automatically move fields up or down, swap characters, convert to upper or lower case, change layout or index from display mode, finds individual record almost instantly.

International compatibility includes full use of accented characters including correct sorting, keyboard configurable to 10 different national layouts, printer drivers supplied to print special characters.

Menu driven. Simple, easy to use system of menus and pop up windows. Keyboard or mouse may be used.

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DEPECHE MODEM

The quick and easy guide to just what those comms freaks do. **MARK SMIDDY** makes contact.

Perhaps one of the most common feelings expressed by modem users is that of loneliness. The long hours spent tapping away at a an impersonal keyboard, the importance of finding that last little bug, the tedium of slaving over a hot VDU...

Don't believe a word of it: they are having a whale of a time. And here's how. At the end of your telephone is a whole new world just waiting to be discovered. But enough cliches: you want to know how to get in on the act. Communications is a subject which can quite easily fill several books. Hugo Cornwall's bank manager will testify to that. Nevertheless, there are a number of things which even this short primer must tell you before you launch yourself on the communications sea.

For instance, the first thing you will need to add to your Amiga is the necessary hardware, this being a modem and a telephone – or at least access to a telephone point. The number of modems available for the home user has increased dramatically over the last few years, and as such the choice has never been wider. This does however, bring about the age old problem of which one to buy! Browsing through the classifieds in the computer press will often bear witness to that.

You must remember though, the modem you eventually choose will largely dictate which computer systems you can access. All the same, the larger systems do support the more common speeds and therefore, most modems. So what is available?

Restrictions, which are mainly due to Telecom's archaic telephone network, dictate four standard data transmission speeds for use in the UK. These are referred to by the codes V21, V22, V22bis and V23: just to complicate matters further, these numbers bear no relation whatever to the actual speeds involved. What's more, other V codes refer to entirely different topics. V24 for instance is more usually called RS232 – it's the non-standard standard for serial data connections!

In English, the V codes applying to modems for general purpose use and the speeds they indicate – transmission (TX) first, then reception (RX) – are as follows: V21 is 300/300 baud; V22 is 1200/1200 baud; V22bis is 2400/2400 baud; and V23 is 1200/75 baud. The faster the baud rate, the faster the data is transferred from your Amiga to the host and back again.

The reason modems are limited to these speeds is the quality of the phone lines; the odd pop is annoying to the ear but fatal to data. Much higher speeds are possible on special, leased lines ▸

A FAIR COP!

Hacking, as it's commonly known, is the practice of gaining unauthorised access into a computer for any reason. Over the years hackers have gained a reputation for being computer criminals – although many do it just for fun.

The law commission have obviously failed to see the funny side, and have just released news of a scheme intended to stop hacking in its tracks. If the proposals come into effect – which does seem likely – anyone found guilty of entering a computer system without permission could be sent to prison for three months.

For the real criminals, that is those intent on either, modifying data or using information for their own personal gain, could be subjected to a prison term not exceeding five years; and that's no picnic.

▸ these are costly and limited to large, business users.

In the bad old days, there used to be two very distinct types of modem – acoustic and direct connect. Thanks to Telecom's privatisation, and better technology, all of today's modems are directly connected to the phone line with a plug: acoustic types, where the phone handset rested on a modem receiver, were rarely any use since they invariably picked up every little sound.

This does mean, however, that in order to connect a modem to your phone your house must be equipped with the new miniature plugs. The outdated "jack" variety will not do. Telecom must do the first conversion for you, but if you have more than one socket it is cheaper and more cost-effective to do the rest yourself. A good specialist telephone shop can change the plug on most telephones for a small charge.

Buying the Gear

As far as modems are concerned, this standardisation means you can almost buy one off the shelf, so to speak. If only it were that simple! The most basic modems available today are of the single speed (V23) variety usually used for accessing older Viewdata services like The Gnome At Home.

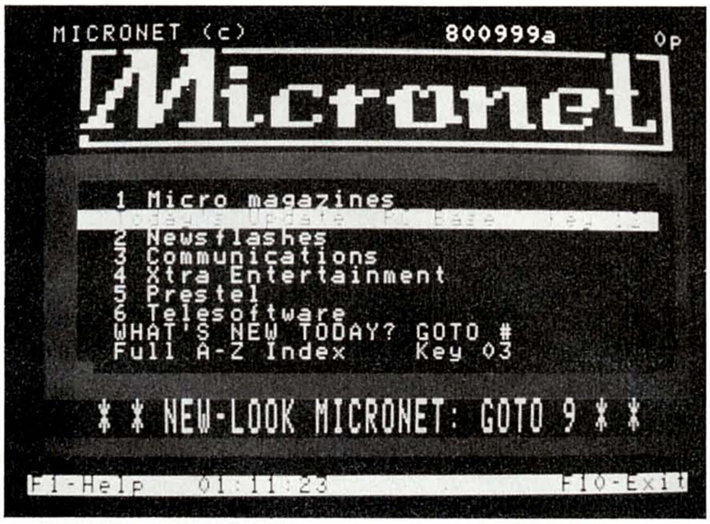
Even so, such modems can still connect to many modern services like Telecom Gold and Istel, who still support this largely outdated standard. The problem with machines such as these is the Amiga's serial port cannot normally work with a split baud rate like 1200/75. This problem can be overcome by clever software. Y2's Ruby Comm, is claimed to be the only package capable of such a feat – although SuperText (see software) does seem to be able to too.

While observing this point, you should be very careful if you intend buying a second hand modem; probably the cheapest way to get started. Many of the older models in circulation were supplied free by Micronet and are only suitable for use with V23 services.

For a fistful of oncers, you can get access to extra speeds like V21 which will enable you to get onto more or less all of the popular services. The main advantage of V21, although it initially seems slower than V23, is that the upload speed is 4 times faster. This means sending messages you have prepared off-line (to save the telephone bill) can be as much as four times faster.

For a few pounds more, you can get closer to the cream of speeds, V22 and V22bis. Often, too, modems supporting these much higher speeds offer many more features beside the basics.

Most of these expensive modems support at least a subset of the Hayes modem language; some even add extra commands. The advantage of Hayes is its wide acceptance by the software industry. Commands take the form of a two letter command start, AT (attention)



■ Logging on to Micronet, one of Britain's most popular and largest public access databases, you may be surprised to see Prestel information.

followed by a list of what the user wants the modem to do. As an example, the D command tells a Hayes modem to dial a number, ie: ATD 0642 820999.

The Hayes command language is so popular among communications software you should not consider buying a modem which does not support it: if you can afford the extra outlay, that is.

At the top of the heap, the best modems support what is called MNP error correction/data compression. MNP is supported at no less than nine different levels (see table) but it is unlikely you will find support beyond level two this side of £500. That said, very few services currently support MNP protocols: until they do, buying such a modem could be a waste of money.

One final word of warning. No matter which modem you get, make sure you get a lead suitable for your Amiga. Do not make do with a 25-way pin-to-pin IBM type: the Amiga's serial port is non-standard and the wrong lead can do serious damage. Also, if you have an Amiga 1000, remember the 25-pin D-connector is MALE, not FEMALE as in the A500/2000.

A BIT OF PARITY

Something you are bound to come up against from the day you first try to log on is the problem of protocol; not behaving yourself in public, but the settings used by the computer. BBSs usually list themselves as telephone number, speeds, and a protocol code i.e: 0642 820999/V22/8N1. The sticky bit is the last three digits which refer to the BBSs comms software setup. If your setup does not match theirs you get screens of useless junk. Briefly, the codes mean the following: Number of data bits 7 or 8; parity None, Odd, or Even; and number of stop bits. For most purposes, try 8 bits, no parity, 1 stop bit (8N1). If that fails try 7 bits, even parity, 1 stop bit (7E1). These settings are by far the most common and should cover most situations.

The Software

If there is one advantage to owning an Amiga it has to be the vast amount of useful software available in the Public Domain, and communications is one area where this is particularly handy. No matter what your needs, it is almost certain there will be a package to suit yours. Among the very best is the colourful shareware package *Access!* supplied with *Format 3:* some of the many others can be found on 17 Bit's *Comms Utilities* Disk 444.

With few exceptions, Amiga PD comms packages share something in common: they cannot support Viewdata screens or the 1200/75 split baud rate necessary for many of these services. The only PD package supposed to support 1200/75 is the excellent *Viewdata* offering *SuperText.* Nevertheless, doubts have been expressed recently as to whether the program is PD or not: 17 Bit software have, therefore, correctly withdrawn the program until the doubts have been resolved.

If you want a complete package supporting both *Viewdata* and the more normal scrolling terminal on one disk then you must turn to the commercial sector. Currently there are three packages vying for places here: *K-Comm II* from Kuma, and *Ruby Comm I and II* from Y2 Computing.

K-Comm at £29.95 is the cheapest, but simplest alternative. Although adequate, it does not support the 1200/75 split baud rate or the downloadable software from Micronet/Prestel.

Y2's *Ruby Comm* series at £69.95 and £99.95 respectively, do support both the split baud and downloadable software, and many other features too, according to Y2.

One other option – although not general purpose terminal software – is Compunet's custom software from Ariadne. The good news is, you only pay the £20 for the software if you decide to join Compunet. When it works, this must be one of the easiest to use since it is geared solely to ▸

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Speedball	£11.99
Dark Castle	£6.99
Infection	£4.99
Xenon	£4.99
Hunt for Red October	£9.99
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Bismark	£8.99
Corruption	£6.99
Prison	£6.99
ShadowGate	£8.99
Tetris	£7.99
Karate Kid II	£5.99

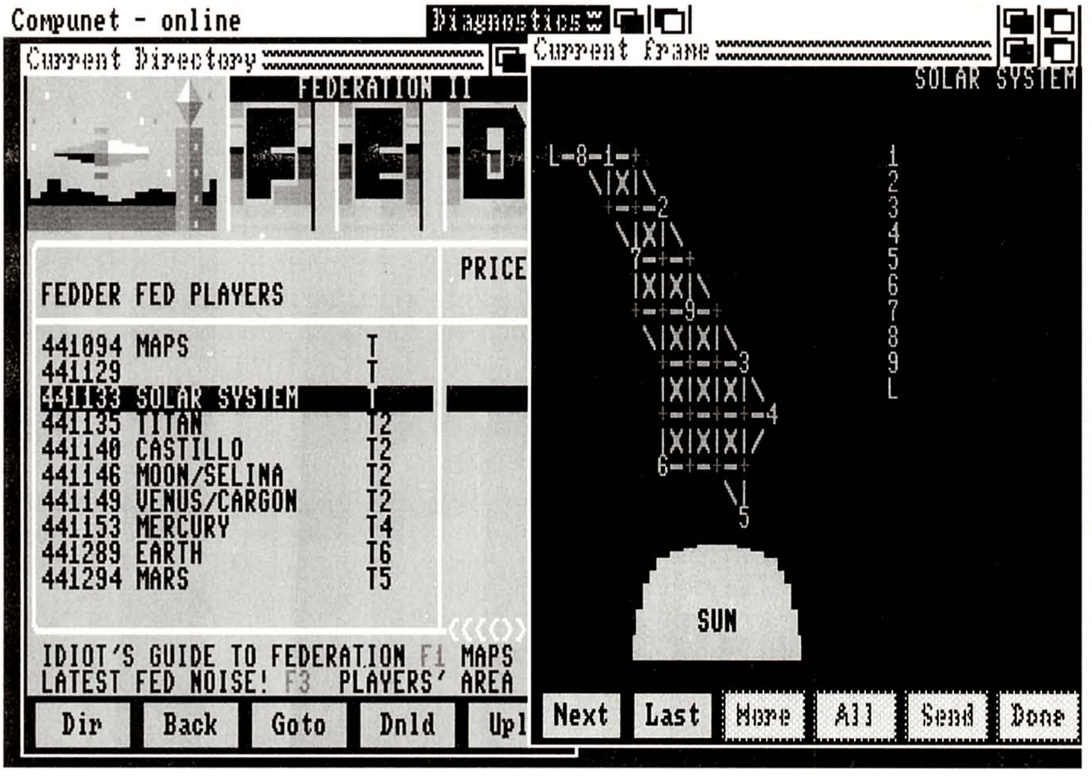
Please Note: Some Titles may not be released.
★ These will be despatched within 24 hours of release, subject to availability.

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Bismark	£15.99
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Darkside	£16.99
Deluxe Paint 3	£54.99
Deluxe Scrabble	£13.99
Dragon's Lair (1Meg)	£24.99
Bard's Tale II	£16.99
Ferrari Formula 1	£16.99
Grand Prix Circuit	£16.99
Kingdom of England	£16.99
Rocket Ranger	£20.99
Trivial Pursuits	£13.99
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■ **On-line games courtesy of Compunet. Although they cost extra, playing against real people is fascinating.**

the Compunet service. All you need to do is tell it which modem you have and select Connect. An autodialling modem does the rest for you.

The Services

Micronet: started in 1982 to coexist with Telecom's Prestel service, and is the largest of the Viewdata databases with over 250,000 pages of information at your fingertips and over 80,000 users nationwide including Prestel. Historically, it was only possible to access Micronet at 1200/75, but due no doubt to popular demand it is now possible to access the system at 300 and 1200 baud full duplex – like the rest of the civilised comms world.

Prestel and Micronet are a delight to use because they are largely intended for non-computer literate people – travel agents and so on. They work on a system of pages. To access any page all you have to do is enter a # followed the page number, and end with a *. For instance, #0* takes you directly to Page 0 which is the main index.

The * character substitutes for the numeric keypad's Enter key which is not fitted to custom Viewdata terminals. This allows you to use the Return key while entering information into forms while on-line.

Apart from the obvious computer based aspects of Micronet – which are not too good for the Amiga at present – you also have access to the vast range of facilities afforded by Prestel, such as Teleshopping, British Rail timetables, theatre bookings and so on. Micronet subscribers also have the cheapest access to the excellent multi-user game *Shades*. It plays very much like *MUD*, the original on-line game; of which it is said "You haven't lived until you've died in *MUD*."

MicroLink: is the largest and most businesslike of all the public access bulletin boards. It was started several years ago by Manchester-based Database publications, and therefore received an awful lot of publicity in some of the computer press: Database's own! For this reason, Microlink is probably the fastest growing BBS in the UK. Unlike Micronet et al, Microlink is based on a simple monochrome scrolling terminal, 80 columns wide.



■ **Compunet, the largest Commodore-specific multi-access database.**

The facilities offered by Microlink are so numerous there is not room to mention them all here. They do include many services vital to today's business and serious home computer. They include FAX, e-Mail and Telex, as well as a translation service of English to any language, and even financial and business news.

At the time of writing, Microlink have just taken a giant step and left their faithful carrier Telecom Gold, to run off with Istel's Infotrac. In classic style, the move to Istel has been surrounded by enough hype to launch a large battleship. Sadly, initial reports from the fledgling service do not look too promising.

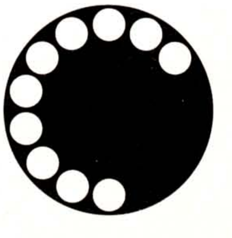
Compunet: is the largest Commodore-specific, multi-access database system. What makes Compunet special is its purpose-written software, which – although making the system appear like almost Viewdata initially – is just the gateway to an extremely powerful system. Unlike Viewdata, Compunet uses a high-resolution screen with 16 colours, the effect of which is, well, stunning. Of the boards discussed here, Compunet are proud to be the most controversial too – as a glance at any late-night Partyline conference will prove. For this reason, they call themselves "The Live One. . ."

Initially, Compunet is the toughest of the three systems to get to know since it uses a system of pages (or frames) which, unlike Prestel, are accessed rather like a directory. The screen is split into two windows: one is used to control your movements around the database, the other displays information contained in each page. Once Compunet enters interactive mode – for the Partyline conferencing or multi-user games – other windows appear allowing you to edit and send messages on-line.

At present, the Amiga's Compunet software suffers from a few serious flaws which tend to detract from this otherwise excellent system. Not least, the software has a nasty habit of dropping into the land of Gurus at the slightest provocation, usually in the middle of some crucial chit-chat. Even so, Compunet's facilities – and thoughtful design – put it at the top of the pile for the Amiga owner.

VIRUS WARNING!

The new ruling on computer hacking (described on the previous page) even applies to the current wave of idiots writing computer viruses. Unlike bootblock viruses (SCA and Byte Bandit, for instance) some newer strains, like IRQ can be transmitted via a modem – unknown to either party. Once loose in a computer system viruses can wreak havoc as we all know. If this law comes in, the



MicroBotics means Amiga™-Power!

Whichever Amiga you own - or plan to buy - we have the expansion you need

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If your application calls for super-speed uninterrupted access to your hard disk, HardFrame/2000 is your answer. This is a high end, no holds barrred SCSI interface that operates at bus speeds. One HardFrame/2000 can support up to seven devices. Word-length data transfer, FIFO buffering, *TRUE* DMA, mounted on a metal frame suitable for all standard 3.5" SCSI drives (or, if you prefer, connected to a bay mounted or external disk). Available now.

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8-UP! FastRAM

Maximum memory in One Slot! The FastRAM card that every Amiga owner will eventually come to - why limit yourself to only two megabytes per slot? 8-UP! Will take you all the way to the top of the auto-configuration memory space of EIGHT MEGABYTES! 8-UP! is available in two versions, the standard DIP model accepts 2,4,6 or 8 megabytes of 1 meg DRAMS. For maximum flexibility there is the SIMM version which lets you custom configure with mixed 256K and 1 meg SIMM modules, including MicroBotics exclusive PopSIMMs. 8-UP! is a power-efficient, zero wait state, autoconfiguring design. "The latest and greatest" (Amiga World, Jan. 1989). 8-UP! is available now with 2MB.

List Price £249.00 + VAT

MouseTime

The easiest to use, most cost-effective implementation of a battery backed clock for the A1000. Passes the port through for joysticks or other devices. Complete with WorkBench software. Available now.

List Price: £22.95 + VAT

For the

Amiga 500...

M501 Memory and Clock

Half a Meg at a Great Price!

As we are all coming to realise, a one megabyte Amiga (at least) is a necessity not an option. When you add the inboard 512K memory and clock module to your A500 makes sure it's a MicroBotics M501. Note that just like the Commodore and unlike some third party expansions, we use a long live rechargeable NiCad battery - which you'll never have to replace. Set the MicroBotics clock using the same WorkBench software as you would use for the Commodore clock. What's the difference? You get to keep £25 compared to the Commodore version. The M501 is available now.

List Price: £99.95 inc VAT

StarBoard2/500

Two Megs PLUS a Choice of Modules.

The premier memory expansion for the A1000 is now available on the A500. In its own case with an independent power supply strong enough to handle StarBoard2 and a second A1000 style StarBoard2, all the power and flexibility of this great expansion device is available to you. Up to 2 megabytes of auto configuring, zerowaitstate FastRAM, MultiFunction or SCSI module capability for math chip or fast SCSI hard disk interfacing. StarBoard2 also has an LED diagnostic/confidence light to indicate the power-up state of your Amiga and expansion. An A1000 style StarBoard2 can be connected to the bus pass-up for a total of FOUR megs and two modules. "The best.." (Amiga World Jan 88)

List Price: £199.00 + VAT

MicroBotics, Inc.

OASIS

For the

Amiga 1000...

StarBoard 2

The Expansion of Choice

The superb memory expansion for the Amiga 1000, still going strong! Up to 2 megabytes of autoconfiguring, zero wait state, FastRAM in a sleek, all steel Amiga coloured case plus the capability to accept either of the two daughterboard modules, the original MultiFunction Module or the new SCSI Module. StarBoard2 is powered by the bus (up to two StarBoard2's can be supported by the A1000) and passes it on.

List Price: £199.00 + VAT

MultiFunction Module

High Tech at Low Cost

This daughterboard installs on any StarBoard2. If features a socket and software for the 68881 Math Chip as an I/O device (MicroBotics pioneered this approach on the Amiga-now directly supported in the maths libraries of AmigaDOS 1.3). StickyDisk gives you the most "bullet-proof" rebootable RAM disk - its hardware protection turns it into a solid state, superfast disk. Parity checking of StarBoard2 RAM can be enabled when extra parity ram is installed. Finally, the MultiFunction Module carries an easy to use battery-backed clock to set the system time on startup.

List Price: £55.00 + VAT

StarDrive SCSI Module

Fast, Low Cost SCSI Module

When installed in any model StarBoard2, StarDrive offers you cost effective, pseudo-DMA access to SCSI hard drives and other devices. Fast, easy to install including driver software and disk diagnostics. StarDrive also includes a battery backed clock to set system time on startup.

List Price £75.00 + VAT

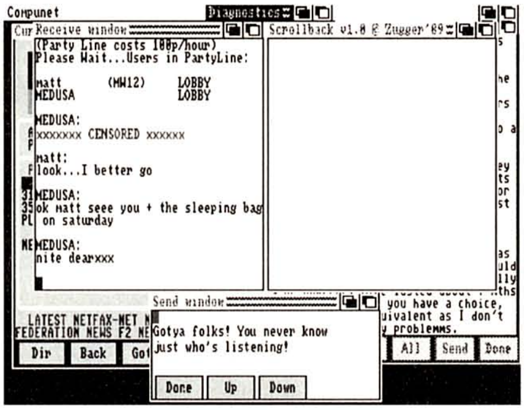
Tell your dealer he can order direct - no minimum quantity - show him this ad!

In Europe: Oasis Services Ltd, 17 Andrews Place, London SE9 2SJ. TEL: (01) 859 4936

In U.S.A: MicroBotics Inc, 811 Alpha Drive, Richardson TX 75081. TEL (214) 437 5330



■ A handy facility of the bulletin board is the exchange of information, though how far to rely on it is debatable.



■ Compunet has a reputation for being "The live one": its party chat lines can encourage lively intercourse...

THE MNP STANDARD

Level 1: Error correction only. Modem speed drops to 70% of normal.

Level 2: As Level 1. Modem operates at 84% of normal speed.

Level 3: As Level 2: data compression increases effective speed to 108% normal.

Level 4: Speed depends on line quality up to around an effective 120% normal.

Level 5: As Level 4 with better compression. Increases effective speed to 200% normal.

Level 6: As Level 5 but can link to any speed of modem.

Level 7: As Level 6 but better compression increases speed to 300% normal.

Level 8: A special standard used by Microcom modems

Level 9: Used by the V32 standard.

What's a BBS?

The idea behind Bulletin Board Systems (BBSs) came from America (doesn't everything?) and dates back to the 1970s. Like all the best ideas, this one is simple: a central computer, accessed by modem, is used to store messages for people to read, just like a notice board.

Since the early days, the idea of the BBS has been transformed from a simple messaging service to a fully interactive computer system. With improved software and technology, it is possible for users to either "post" messages on the board for everyone to read, or just send messages to each other. This latter is called e-Mail (electronic mail) and has seen the adoption of the term "mailbox" used for individual user's identity codes: you place e-Mail in people's mailboxes.

From this basic idea, systems have been developed to enable you to send mail and receive mail through the international Telex system. Surprisingly perhaps, it is cheaper to buy a complete Amiga system, modem and subscription to Telecom Gold or Microlink, than it is to buy a custom-built telex machine! It is even possible to send a FAX in much the same way. However, as the current system stands it is only possible to FAX pure ASCII text. Of course all these services – except e-Mail – cost money.

Downloadable Software

One of the most popular area of all BBSs are the libraries of downloadable software. Apart from some Viewdata systems, like Micronet which has its own system, most systems use one of several standard methods for transferring software.

The most efficient method in common use is Xmodem: it is fast and reasonably safe because all data is subjected to rigorous checksums. By definition, Xmodem is designed to transfer binary (8 bit byte) files, and some systems – like Telecom Gold and Micronet – cannot support it because they only transmit 7-bit bytes.

To get around the 7-bit trap, some systems have resorted to expanded ASCII. This involves coding every byte into a two-byte hex number, thus sending twice as much, in effect. The file can be converted to binary later by a simple BASIC program.

Advanced systems like those used by the new Microlink do transmit the full 8-bit byte, and therefore support Xmodem. Some even support other file transfer protocols. Ymodem batch and Kermit are typical examples, but in addition to supporting binary transfers, both these can transfer filenames as well. This way you can download 20 or more files with one simple command: the transfer does the rest. Similarly, the new system used by Micronet can build all the necessary sub-directories automatically; you will need *Ruby View* access Micronet's telesoftware though.

Games On-Line

The history behind on-line games is a little cloudy (or should that be MUDDY?) The first proper multi-access game was the *Multi-User Dungeon* or *MUD* and lived on Essex University's mainframe. By today's standards, though, *MUD* looks a little crude, although it still maintains its appeal largely because it was first. If you want to play *MUD* now you will have to wait, because the version which was on Compunet has vanished for the time being.

But worry not, because where there's a will... everyone jumps on the bandwagon! Today all of the major BBSs have some form of on-line game. Micronet was the first to start with *Shades*, their answer to *MUD*. Compunet on the other hand supply the option of *Federation II* (a space trading adventure) or – by the time you read this – *Realm*. Not to be outdone, even Microlink have *Bloodstone* (and a version of *Federation II*).

A lot can be said about these games, but they do have a few things in common. First, they cost extra to play. Prices vary greatly but are typically around £1.50 to £2.00 per hour connected. Second, these games are very addictive: it is not unknown for users to spend hours on the 'phone with predictable results when the bill arrives. Lastly, although most on-line games are adventures of one sort or another, you are playing against REAL people, as well as "mobiles," the characters supplied by the computer. Fans of *Dungeons and Dragons* are invited to try *Realm* which, according to its author, "is the closest thing to true role playing yet."

The Last Word

Whichever system you choose, the comms bug will get you in the end – that much is inevitable. Whether you use your Amiga for playing the latest in games or for writing your latest novel, there is a BBS out there with something for you. As the comms revolution quietly sneaks in and overcomes us, it is not surprising the pundits are suggesting we will lead an increasingly sedentary lifestyle. Whatever happens, the modem and the BBS are here to stay: if you can't beat 'em... ■

WHAT IT COSTS, AT A GLANCE

	Joining fee	*Quarterly subscription*	*Peak use per min*	*Off peak per min*
Micronet	£147.95*	£23	8.05p	1.15p
Microlink	£17.25	£24.15	5.75p	Free**
Compunet #1	£20***	£12	6.66p	1.33p
Compunet #2	£20***	£29.50	6.66p	Free

* Optional Micronet starter pack includes 1 years subscription, Ruby View and Datachat 1223 modem.
** Microlink make an additional charge of 4.6p per block of 500 chars during peak periods reducing to 1.15p during off-peak. The first block is free.
*** Charge for custom (shareware) software only

All prices stated included VAT at 15% but do not allow for telephone charges which are variable anyway.

Where to find them: Compunet: 01-997 2591, Mercury Communications: 0800 424913, Micronet/Telecom Gold: 01-208 0722, MicroLink/Istel: 0527 28515 Ext 2697

WORKBENCH

If you have a problem that needs solving, or a question that needs answering, where do you go? WORKBENCH of course! The infamous **JASON HOLBORN** answers more of your Amiga-related queries.

ICON PROBLEMS

I have noticed on a number of PD disks that they have edited the RAM disk icon. I have been using a number of icon utilities but keep getting the message 'Cannot access the Icon'. How can I edit the RAM disk icon? It does not seem to allow a 'RAM DISK.info' or 'RAM.info' icon to be even loaded.

AS Lewis
Upton, Wirral

There are actually two sides to this problem. Firstly, how to actually load, edit and save the RAM disk icon and then how to actually display the new icon in all its glory.

Loading the RAM disk icon is fairly straightforward. When your icon editor asks for the filename of the icon to be edited, enter the filename 'RAM DISK:disk.info'.

Once you've altered the RAM disk icon, you'll want to actually view it. Simply saving the modified icon straight back to the RAM disk won't work – the Amiga will continue to display the old RAM disk icon. The answer is to save your modified RAM disk icon to your boot disk (Workbench in most cases) under a different filename ('SYS:RAMDISK.ICON' is a good filename).

Next, you must major a quick change to your startup-sequence so that the icon is copied across to the RAM disk. Firstly, load the StartUp-Sequence file into a text editor and locate the line that reads 'LoadWB'. Once you've found the line, insert the line 'COPY SYS:RAMDISK.ICON RAM:disk.info' immediately before it and then resave the StartUp-Sequence under the same filename.

Now when you reboot your Amiga, the RAM disk icon will always display your icon instead of the rather dull default icon, when Workbench finally appears.

ADVENTUROUS BASIC

I am writing a text-based adventure game in AmigaBASIC and would appreciate your advice on the following points:

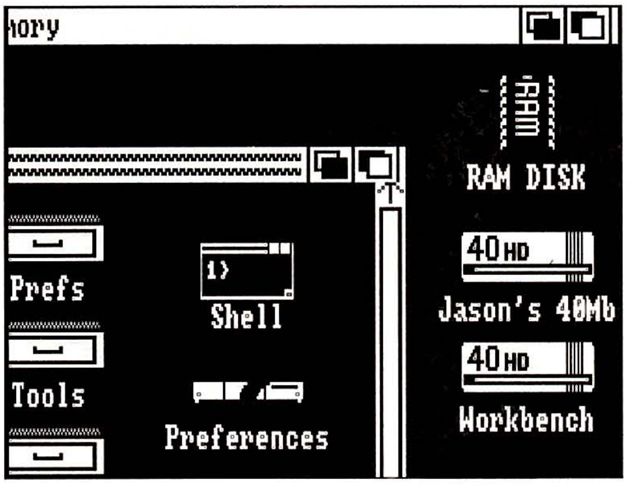
1. I have set up a separate boot disk containing AmigaBASIC, a large sequential data file and the game program itself. Despite following the listing you printed in Issue 3 of *Amiga Format*, I am still unable to use any fonts other than the standard Topaz font. What am I doing wrong?
2. I would like to include a 'READ.ME' text file detailing the game's scenario, instructions and various credits. Could I use Memacs to create this file? and how would I attach an icon to it so that the player could open and display it from Workbench?
3. I would also like to incorporate an IFF picture from *Photon Paint* as a loading screen. Can you explain how to do this?

AJ Lock
Dyfed, Wales

1. For our listing to work, two extra files have also to be on your BASIC boot disk. Firstly, you will need to create a 'LIBS' directory and then copy the files 'diskfont.library' and 'diskfont.bmap' into this newly-created directory. You'll also have to create a 'FONTS' directory and then copy the fonts that you intend using within your game into that directory.

2. The easiest way of doing this would be to copy one of the text files from our Coverdisk across to your disk and then rename it to what ever you require (copy it by dragging the icon and you'll copy both the text file itself and its associated icon file). You'll also have to copy our text display program called 'MORE' that can be found within the root directory of every Coverdisk. Finally, just edit the text file to suit your needs. Simple!

3. Photon Paint *produces HAM pictures which can be a real pain to use from AmigaBASIC. A better solution is to produce your picture within a non-HAM package such as* Deluxe Paint *and then use the 'LoadILBM' source code on your Extras disk (to be found within the Basicdemos drawer) to actually display it.*



■ **Our new RAM disk icon in all its glory.**

MIND YOUR LANGUAGE

I've been writing games on my Amiga using the bundled BASIC, but I feel I've taken the language as far as it will possibly go. I am therefore seriously considering buying an alternative language to allow me to produce more professional results. So far the options are C, Modula2 or Assembler. Which to you recommend?

Could you also recommend a couple of good books to help me get to grips with the new language? Thanks.

Neil Pie
Bristol

In your particular case, there are two options. The first is to wait until December and check out Mandarin's AMOS, which is a BASIC-like programming language designed specifically for the creation of games software. The package also includes a complete sprite editor, map designer, music composer and other tools to aid the creation of games. In its

ST incarnation, the utility has been used to create some quite stunning arcade games that have even been sold commercially.

If raw speed is what you're after, then assembly language is your only choice. Contrary to what some compiler manufacturers will tell you, no other language can even start to compete with the raw power and speed of assembly language. If assembly language sounds like your cup of tea, check out Argonaut's 'ArgAsm' assembly language development system (we reviewed it in last month's issue).

Books wise, If you wish to learn assembler programming on the Amiga then there are three books you should be seriously considering. The first is Abacus' 'Amiga Assembly Language Programming' which should teach you assembler and the final two are Addison Wesley's 'Amiga Hardware Reference Manual' and Abacus' (again) 'Amiga System Programmers Guide' which are both indespensible reference books for all good games programmers.



■ How to transfer C64 software to your Amiga? See "Talk to Me!"

TALK TO ME!

I wonder if you could help me. My problem is that I've got a large BASIC program that I've written on a Commodore 64 and I would like to transfer it to my Amiga 500. I don't want to have to type it all out again.

I have a Commodore 1541 disk drive and I've bought a cable which connects the disk drive to the parallel port on my Amiga but I just can't seem to get the two to talk to each other. Help!

A Dudman
Swindon, Wiltshire

Just plugging peices of hardware into your Amiga because you've got a lead that seems to fit both is a dangerous thing to do: you could do serious damage to both the Amiga and your C64 disk drive!

There are three different ways you could transfer your program. The first method would be to connect a serial cable between the C64 and the Amiga and uses Comms software on both to transfer the file that way. Another solution would have been a little widget marketed in this country called Precision called Access 64 that allows you to connect C64 peripherals to your Amiga and use them as you would standard Amiga devices. Unfortunately, Precision tell us that the device only works on the A1000 and so unless you're lucky enough to own that machine then you won't be able to benefit from this.

The other alternative to to treat yourself to ReadySoft's C64 emulator which includes an optional adaptor to allow you to plug in your C64 drive.

DIGITAL DUMPS!

I've noticed when looking through your recent issues that you've stopped using screen shots like other magazines and instead, have started using what looks like screendumps. What package do you use to lay out your pages? *Professional Page* perhaps? Secondly, how do you actually grab screens for use within *ProPage?* I've seen the Workbench Grabscreen program but your mystery program seems to grab screens from just about everything!

W Smithson
Dundee

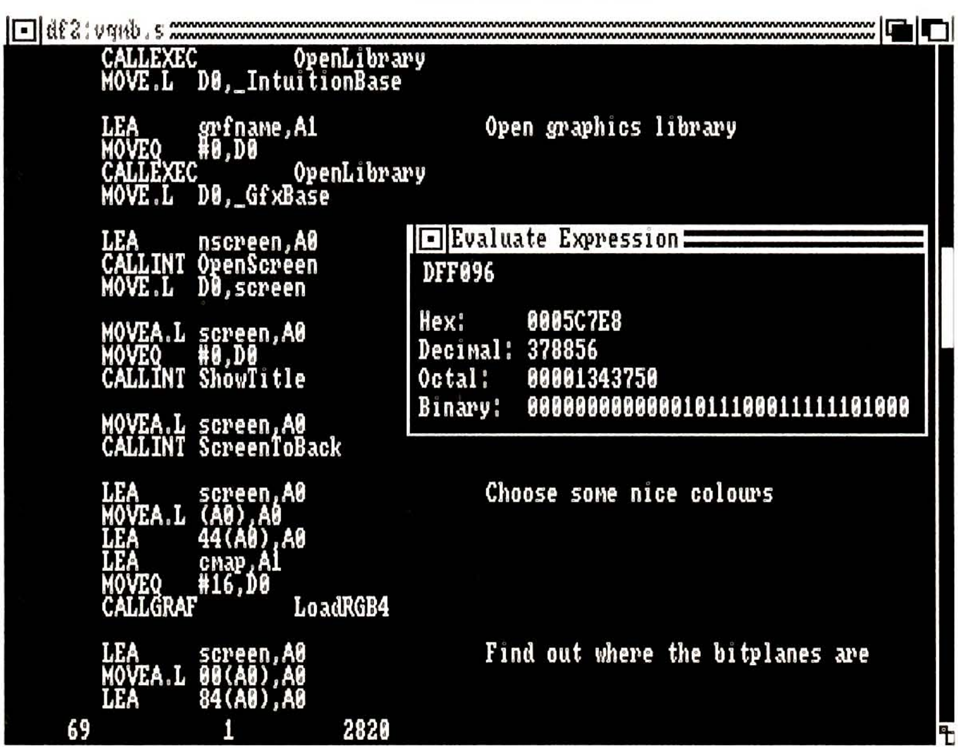
While we still use screenshots on games pages, we do indeed use screendumps whenever we feel they are required. For games, it's always best to stick to screenshots (or 'trannies' as the art people call them) as the pictures are more natural. Trannies can be blown up to quite a large size without any loss of quality whereas screendumps can end up being rather blocky. However, when reviewing a product such as Music-X, where detail is all important, screendumps give the best possible resolution.

We must admit, we don't actually use Amigas to lay out our pages. Instead, we use powerful Macintosh II computers running a Mac DTP package called Quark XPress. However, the Amiga is used extensively for image processing of screendumps to

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There's no need to suffer those sleepless nights of worry. Wipe away those worry lines by sending your worried words to the Amiga Format Workbench helpline. Obviously we can't enter into personal correspondence, but if you have any questions, then we'll try our utmost to answer them as fully as possible within these pages. Send your troubled words to:

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give the best possible results when the screendump is finally colour separated.

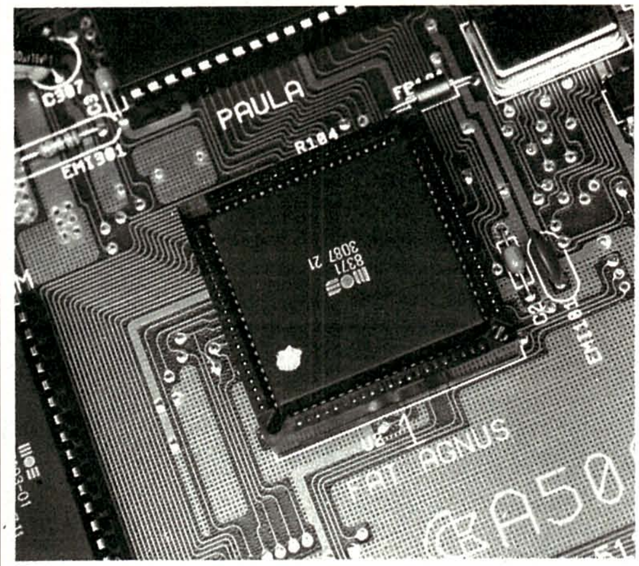
The screendump utility we use is a PD program called 'SnapShot' which is available within the Fish collection of PD disks. SnapShot works using 'hot keys' and this therefore not dependent on the Workbench screen being available. However, SnapShot will not grab screens from games (we have a little in-house device to do that!)

HOW HEAVY IS YOUR AGNUS?

I have recently bought an Amiga B2000 from Lan Computers. When I purchased the machine I was informed by the sales person that the machine was fitted with the new fatter Agnus chip that gives 1 Mb of Chip RAM.

How do I tell if my machine does indeed include the new ECS Agnus? What applications should benefit from the extra chip RAM available? Also, will software houses take advantage of it?

P Redmond
Walthamstow



■ **Will a larger Agnus chip make any real difference to me?**

The easiest way to test whether you have a 1 Mb Agnus is to enter the CLI and type Avail. If the amount of chip RAM available is greater than 500K then you have an ECS Agnus (make sure no other programs are running when you do this, though, as they could swallow up Chip RAM).

Any programs that are graphically or sonically intensive will benefit from the new Agnus. For example, your sound sampler will be able to capture considerably longer samples and you'll be able to run programs such as Deluxe Paint *in high resolution mode while also running a program such as* Professional Page.

If software is written to abide by Commodore's guidelines then the increase in Chip RAM will be transparent to the application. In theory, all applications programs should automatically take advantage of any extra chip RAM available without the need for modification. Many applications, particularly something like Professional Page, *will be made considerably more useable by the presence of 1 Mb of chip RAM.*

LOCK ON!

Writing applications software in AmigaBASIC is a fairly straightforward affair until it comes to the task of making programs foolproof (Reviews Editor proof?) While your program may be the most powerful thing this side of a Cray, it is often the silly little error-trapping problems that give a program a bad name. For example, how many times have you used a program written in AmigaBASIC that asks for a filename, tries to load it from disk and then crashes out because it cannot find the file? Sounds familiar, doesn't it?

The solution is to use the DOS library routines Lock() and UnLock() which test whether a specified file or directory exists. If the file does exist, AmigaDOS will successfully lock onto the file and return a filing system handle. If the file or directory doesn't exist, the Lock returns a value of zero. Once the file has been locked successfully, you can then unlock it and open it as you would normally. Enough wibbling, here's a small demonstration program which should help you get the general idea:

```
LIBRARY "dos.library"
DECLARE FUNCTION Lock& LIBRARY

INPUT "Enter Filename : ",Filename$
Found& = Lock&(SADD(Filename$+CHR$(0)), -2)
UnLock(Found&)

IF Found& = 0 THEN
    PRINT "File does not exist"
ELSE
    PRINT "Yep, the file exists matey"
END IF

LIBRARY CLOSE
```

For the program to work, you'll have to use the ConvertFD utility on your Extras disk to create a .bmap file for the dos.library (consult your AmigaBASIC manual for details on how to do this) and save it to your LIBS: directory.

B Daniels
Liverpool

BACKUP WARNING

A word of warning to all *Memacs* users. The version of *Memacs* released with the Workbench 1.3 enhancer software does not alter the archive bit on the file just edited. This means that if you backup your hard disk incrementally, any files edited using *Memacs* will not get backed up until you do the next full backup. Anyway, that's what happened to me!

T Wood
London

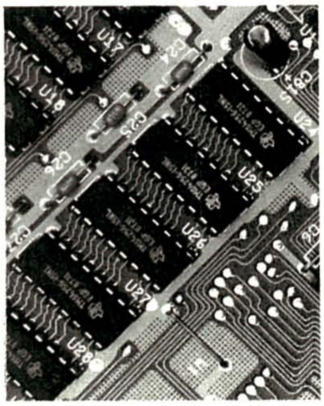
FAST, FAST, CHIP, CHIP, FAST

Writing assembler programs that make extensive use of the Amiga custom chips which will run correctly on an unexpanded Amiga is a doddle – you never have to worry about your program crashing out because of the wrong type of memory being used.

However, problems start to occur when you try to run a program on an expanded Amiga that addresses the custom chips. Unless you've told your assembler or linker that you wish custom chip data to be loaded into chip memory, most assemblers will produce code that automatically writes its data into fast memory.

There are a number of ways of ensuring that your custom chip data will always be loaded into chip memory. The first, and probably the simplest way is to try and get your hands on the PD program *FixHunk* on Fish Disk No 197 (Developers can of course use the *Atom* utility). Once you've linked your program, all you have to do is to enter either Atom MyProg –CC or FixHunk MyProg and all data hunks will be pushed into chip ram. The second method is to tell the linker to push data into chip ram by using the BLink 'CHIP' option.

For Devpac 2 and ArgAsm users, these assemblers include a very powerful 'SECTION' directive that allows you to split your source code into multiple sections and specify both the hunk type and the type of memory that is used for each. For example, if you had a slice of code containing some sprite definitions and screen data, you would insert a line such as SECTIONMySprite&ScreenData,DATA_C immediately before the data. For further details of the SECTION directive, consult your Devpac or ArgAsm manuals.


■ **Are you programs chip RAM compatible?**

J Watts
Newport

ABSOLUTELY WINDOWFUL!

One of the most common complaints of users of AmigaBASIC is the lack of control over Intuition windows. However, if you're lucky enough to own HiSoft's BASIC then you'll be happy to learn that clever Mr.Pennel at HiSoft has extended the language to allow more precise control than was ever thought possible from BASIC.

The syntax of the WINDOW command is WINDOW OPEN id,



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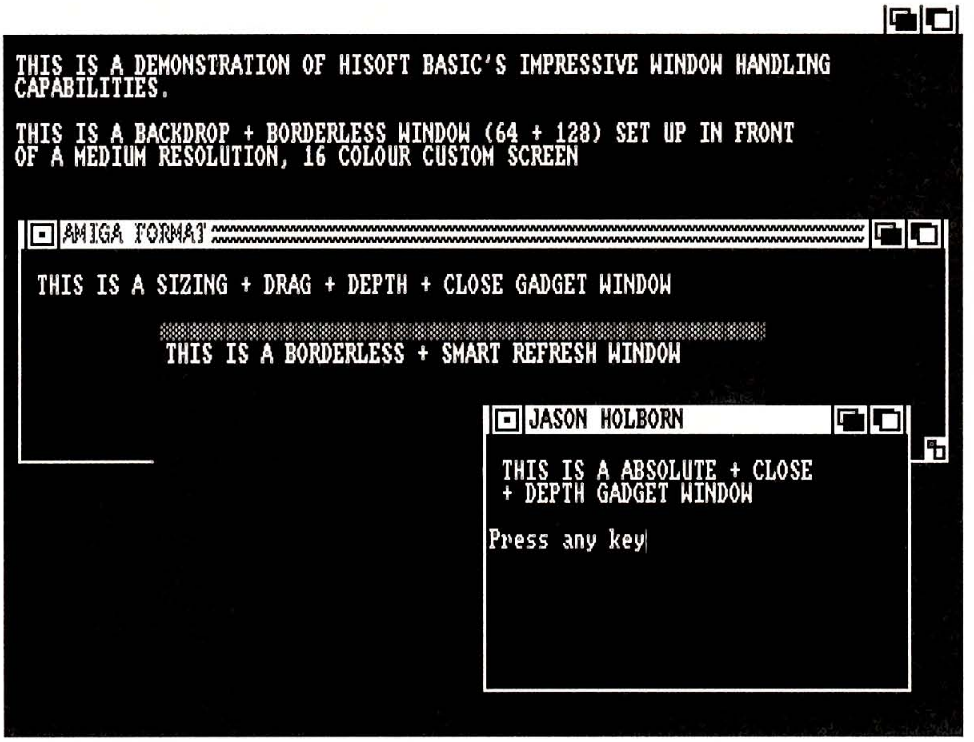
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title, (x1,y1)-(x2,y2), type, Screen id. The parameter 'type' defines the attributes of the window to be opened, and it is this parameter that has been extended within HiSoft BASIC. The type parameter is a number that is made up by adding the different components together (see table below). Within the current release of AmigaBASIC, the window attributes consist of five window options that can be put ogether in any combination. For example, if you wanted to open a backdrop window that had smart refresh (the window is automatically redrawn if a window that covers it is removed) and includes both a sizing gadget and a drag bar, then the type parameter would have to be 83 (1+2+16+64).

Unlike AmigaBASIC, HiSoft's 'WINDOW' command has been extended to allow more flexible handling of windows. HiSoft BASIC includes four extra attributes that can be assigned to a window such as non-GIMMEZEROZERO, backdrop, borderless and absolute window sizing. Here's a complete listing of all the window options and their values (options 32 through to 256 are HiSoft BASIC specific and cannot therefore be used from AmigaBASIC).

K McDonald
Southampton

Value	Meaning
1	Sizing gadget
2	Drag Bar
4	Depth gadget
8	Close Gadget
16	Smart Refresh
32	Turn off 'GIMMEZEROZERO'
64	Backdrop Window
128	Borderless Window
256	Absolute Window co-ords



■ The AmigaBASIC WINDOW command lets you 'Amiga-ise' your programs.

BLOOMIN' L!

Although Workbench 1.3 has been with us for some time now, many people are still unaware of the power locked away within the new, improved CLI commands. The 1.3 CLI command set includes several new commands and many that are extended far above their 1.2 counterparts. One particular command that has enhanced beyond belief is the little-used 'List' command.

Among the extra options added to List is the 'LFORMAT' option that will be particularly useful to those of you who enjoy fiddling with batch files. The option is very similar to AmigaBASIC's PRINT USING command, since it allows you to modify the output from LIST to automatically create script files. For example, if you had a command such as 'VILBM' that doesn't support wildcards, but you wanted to view all files that ended in '.IFF' within a directory called 'PICS', how would you do it short of typing every filename? Simple: you use LFORMAT!

LFORMAT is used to change the output format from LIST by using what Commodore call an 'Output Format Specification' string. When LIST starts, it inserts the filenames from the specified directory into your format string which can then be redirected into a separate text file. Once the output text file has been created, all that remains is to run it using the Execute command.

The format of the output string is LFORMAT "string". To include the output of LIST within this string, you use %s to indicate where the filename is to be inserted.

Going back to our *Vilbm* example, all you would type to solve this problem would be LIST > RAM:MYSCRIPT PICS/#?.IFF LFORMAT "VILBM %s%s" and then once this has finished, you would then execute the script file by typing EXECUTE RAM:MYSCRIPT. What the first command would do is to search the directory 'PICS' for any commands ending in '.IFF' and the output the results to a file called 'RAM:MYSCRIPT' in the format VILBM <filename>.

The number of occurences of %S dictates how the filenames are inserted into the format string. If there is only one %s, then only the filename is inserted, two '%s's inserts the path and filename, three inserts the path, filename and path again and four inserts the path, filename, path and filename.

D Oikman
Manchester



■ List's LFORMAT option in action.

WOW! FIFTY BIG ONES!

Everyone knows what a complicated beast the Amiga can be at times, which makes a section such as Workbench a real life saver. If you have any cool little tips that you think would be of use to your fellow Amiga owners, then why not scribble them down and send them into Workbench – you could win yourself £50 for your troubles. This month's lucky tipster is Derek Clyne in Liverpool for his ingenious BASIC code.
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GAMEBUSTERS

You have to get up pretty early in the morning to beat these games nowadays: so thank goodness some of you are staying up all night to do just that! And here's the results...

SAVAGE

To have all three lives at the start of Level Two type in this seven-letter password:

SABATTA

Ali Nasir,
London W6

RAIDER

Having trouble making it through the game? Try starting on a higher level! And here are the codes:

SHOT
DYKE
HIGH
LINK
PEAR
KILN
BAND

John Warland,
Eastbourne



Send in any tips, maps, pokes and low-down dirty tricks you use to get you to that end screen and you could not only be helping fellow gamers, but you could walk off with £50 of software for your troubles -- COR!! Now there's a good deal!



RICK DANGEROUS

Handy hints and helpful tips.

Use the gun and dynamite wisely. Very often the guards can be left alone or dodged so Rick can get past without having to resort to violence. When a guard does need killing, try poking him with the stick to freeze him first, then drop a stick of dynamite. This is a good way to save on valuable bullets.

ENEMIES

There are several types of enemy ranging from guard dogs to barrels, but the most common are the guards which come in four types:
Intelligent: These bright sparks will try to follow you but when they find you are out of reach will look for another way of getting to you.
Annoying: These wander around in random patterns and can be a real pain to get past.
Predictable: As the name suggests, they move in set patterns (usually back and forth, back and forth), so they're not too much of a problem.
Spectrum users: (a little bit of politics, my name's Stephen – goodnight!) Incredibly dumb, these ones. They just come straight for you and can easily be coaxed into walking into spikes, spear traps or anything else that's likely to kill them. They are none too bright.

TRAPS

Spear traps. Watch out for these, they look like faces on the first level and snakes on Level Two. Not all spear traps work and the ones that do only work when you're at a certain range. All spear traps can be avoided by crawling under the spears.

LADDERS AND HAND-HOLDS.

Ladders are all right for getting around, but if you see a hand-hold use that instead. On Level One, the hand-holds look like random marks on the wall. On Level Two they are the tiles with two long and two short vertical lines.

MOVING BLOCKS.

There are four types:
Dynamite blocks: these are moved by placing a stick of dynamite next to them, but beware! Some shoot towards you so be prepared to jump to save your precious skin.
Bullet blocks: as the name suggests, they are moved by shooting at them.
Switch blocks: surprise, surprise, activated by switches (these tend to move to pre-determined positions when operated).
Dented blocks: activated by poking your stick into the dent.

OTHER THINGS

Some floor spikes have grey shadows which mean there is some way of turning them off (long spikes are often switches). When you land on a bouncing floor, pushing up will make you bounce higher. Beware of the bats on Level One, the mummies, Ark of the Covenant and the Gem on Level Two and the guard dogs and barrels on Level Three.

Leaving the best until last: enter 'POOKY' on the high score table and any level completed can then be skipped by means of a handy level-select screen.

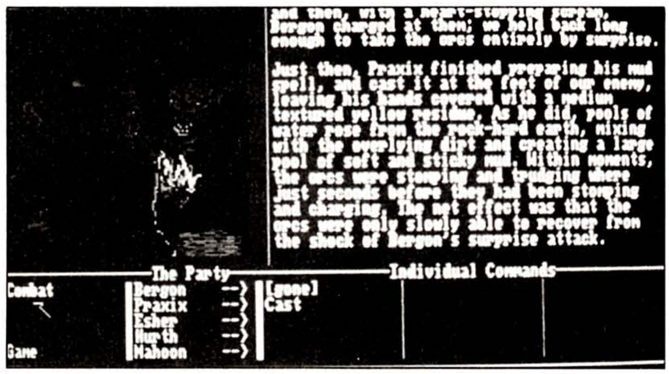
Stephen Fifield
Plumstead.

JOURNEY

It's not often we print complete solutions to an adventure, but we've had so many requests for this we've decided to go ahead. Be warned: if it might spoil your enjoyment, don't read it all!

PART I

■ Start game. Enter store. Esher look around. Praxix examine map. Praxix reply. Tag buy map. Tag sell map. Exit store. Proceed.
■ Enter tavern. Esher look around. Exit. Accept Minar. Proceed.
■ Minar scout. Go right. Minar scout. Praxix examine bodies. Proceed.
■ Minar scout. Follow smoke. Knock. Tell truth. Minar look around. Exit. Praxix examine bag. Proceed.
■ Esher examine stream. Find gold. Find gold. Praxix cast elevation at Tag. Proceed.
■ Enter cave. Praxix cast glow at staff. Proceed.
■ Enter pool. Leave tube. Hide. Examine Minar. Wide path. Left. Pick up torch. Back. Right. Pick up blue amulet. Proceed.
■ Pick up cover. Drop blue amulet. Junction. Smelly pool.
■ Dive. Pick up blue amulet. Surface. Back. Back to cave. Proceed.
■ Upstream. Upstream. Build raft. Launch raft. Cross. Cross. Cross. Cross. Praxix cast glow on map. Praxix examine map.



PART II

■ Minar scout. Tag get help. Enter. Proceed. Proceed. Proceed.
■ Parley. Tell truth. Accept. Proceed.
■ Up. Left. Cast elevation at Hurth. Cast wind. Leave Bergon. Up. Hurth look around. Tag pick up spyglass. Down. Down. Proceed. Proceed. Proceed. Proceed.
■ Back. Cast tremor. Proceed.
■ Hurth examine runes. Enter. Left or right. Proceed.
■ Cast flare. Cast elevation at Hurth. Left. Right. Fight. Hurth flank. Praxix cast mud. Combat. Combat. Combat.
■ Return. Back. Up. Right. Exit. Split up. Bergon return. Praxix return. Cast blaze (or tremor or lightning at stump). Down. Back.
■ Stream path. Approach. Approach. Talk to elf. Speak elfish. Tag say 'AGRITH-B'RAN'. Praxix route. Down. Back. Esher examine walls. Praxix examine walls. Proceed.
■ Left. Left. Left. Up. Elf home. Follow elves. Cast rain.

PART III

■ North route. Enter. Confront. Down. Down. This level. Hurth scout. Around Orcs. Right. Praxix examine runes.
■ Speak. Praxix says 'LOREM'. Back. Past Orcs. Cast tremor. Cast elevation at himself. Proceed. Proceed.
■ Cast tremor. Combat. Combat. Mix reagent with water essence. Use mix on Bergon. Proceed.
■ Enter tunnel. Left. Old mine. Praxix examine walls. Back. New mine.
■ Enter cleft. Hurth examine walls. Back. Enter cleft. Hurth examine walls. Ask miner about mine. Ask miner about mine. Tag pick up red rock. Back. Back. Right.
■ Crude path. Hurth examine crack. Down. Hurth. Jump. Look around. Praxix examine key. Climb up. Back.
■ Ornate path. Praxix examine door. Open door. Mix reagent with fire essence. Use mix on vault. Praxix examine coffin. Praxix examine white stone. Back. Back. Proceed. Proceed. Proceed.
■ Cast flare. Proceed. Ask tree about paths. Ask tree about locations. Road to ruin. Cross. Proceed.
■ Tower. Up. Accept. Down. Mix reagent with fire essence. Use mix on stones. Back. Courtyard. Cast flare or rain or lightning. Proceed.
■ Hide. Follow Orcs. Inventory. Use red rock. Run for it. Praxix examine mechanism. Cast glow on staff. Down.
■ Explore inside mill – go to control room and examine dials. Move dials and press button and wait until axe appears in shallow pit. Enter pit.
■ Pick up axe. Mine rock. Go back to control room and turn dials. Press button.
■ Go back to pits and enter shallow pit – Praxix should be at an exit. Follow light to escape.
■ The dials are different with each game you play so the only ▸

THUNDERBIRDS MISSION 1

Alan - take torch and grease gun. Brains - take lamp and any other item.

Complete Brains' part of the mission first or he'll drown while Alan does his. First drop the useless item (not the lamp) as it isn't needed. Then go to the room with the spanner and pick it up. Then go to the room with the hammer and pick that up. Then take the lamp, spanner and hammer to the room with the lift. Use the hammer to fix the lift.

At the top, go right into the next room and use the spanner to fix the water pump. Drop the spanner and go to the room next to the lift and get the dynamite plunger. Go all the way to the room with the blockage and drop the plunger.

Retrace your steps to the room with the fuse and take it. Go back to the plunger, drop the lamp and pick up the plunger. Go as far left as possible then use the fuse, walk right as far as possible without pulling out the fuse and use the plunger. Return to the blockage room and you should find it has disappeared. Go to the trapped miners' room and transfer to Alan.

As Alan, go to the room with the ladder and pick it up. Then go to the room on the right and use the ladder to cover the hole. Return for the object you dropped and then go to room with the cart. Use the grease gun to oil the wheels of the cart and push it three rooms to the left where it will cover a hole. Return to the room with the pneumatic drill and take it. Go to the room with the power point and drop the torch. Go into the next room and get the compact cable before returning to the last room.

Go as far right as possible and use the drill to drill through the wall. Go through and meet up with Brains and the miners. Control will now be transferred back to Brains who should go all the way back to the mole with the lamp. Once he gets there, you'll be given a congratulatory message and told the password to level two which is RECOVERY. The other two codes are: ALOYSIUS and ANDERSON

Joseph Clare
Cheam


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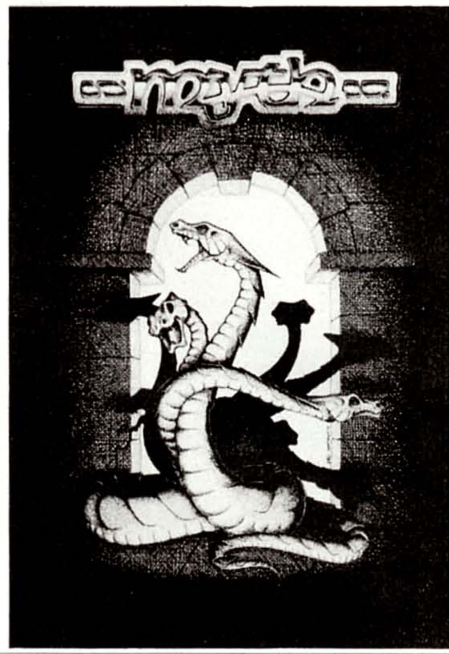
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solution is to experiment until you get the correct combination of dials.

PART IV

- Hurth examine shadow. Hide. Mix air essence and water essence. Proceed.
- Stay. Ask Umber about Mudwargs. Get advice. Examine Umber's sack. Mix black reagent with fire essence. Use mix on staff. Leave. Curio shop. Look around. Reply. Buy grey stone. Trade spyglass. Proceed.
- Tavern. Esher examine other table. Cast invisibility. Eavesdrop. Eavesdrop. Eavesdrop.
- At this point, make note of captain's name as it changes with each game, thus it will be different each time. Exit.
- Inn. Check in. Accept. Exit.
- Wharf. Yes. Bergon say (name of captain you found in tavern). Zephyr. Tell truth. Accept. Camp out.
- Mix grey reagent with fire essence. Call sheriff. Cast tremor. Use mix on sheriff. Relax.
- Climb mast. Cast elevation at Tag. Cast wind. Pick up Praxix pouch. Mix fine yellow with course red and add pinch of course white. Cast mixture.
- End of game and you've won! Now read the musings...

Cpl G. Moffat
BMH Hannover

BATTLETECH

Everything you need to know to get you off to a good start in this hi-tech adventure...

CITADEL

You start here with nothing but a 35 C-Bill. In order to survive you need to learn a lot of different skills and that needs money. The best way to earn money is to invest all your money in the BakPhar company. The profit is very high (100%+) and so is the risk: so always save the game after getting out of Comstar station (where you invest your money).

The trading occurs every time you receive a 15 C-Bill from your family, so check your investments every time you receive some more pocket money. If you lose money, simply go back to the last saved game and try again. If things have gone well, reinvest the money again and save the game as early as possible.

The trading continues until you have more than 2000 C-Bill (including those you carry) so don't hesitate to spend your money on skills (including combat skills like bow and blade and technical) which can be learned from Citadel and Mechit-Lube. You should also buy a weapon – missile launcher and inferno are the best – and armour (lightweight armour). Bear in mind that you can only hold one weapon and one armour at any one time.

Between trading you will have enough time to go to the mech training grounds in the south-east corner of the city to learn how to use a mech. After each session you need to wait a while before the next session, so it's an ideal time to go and check your investments.

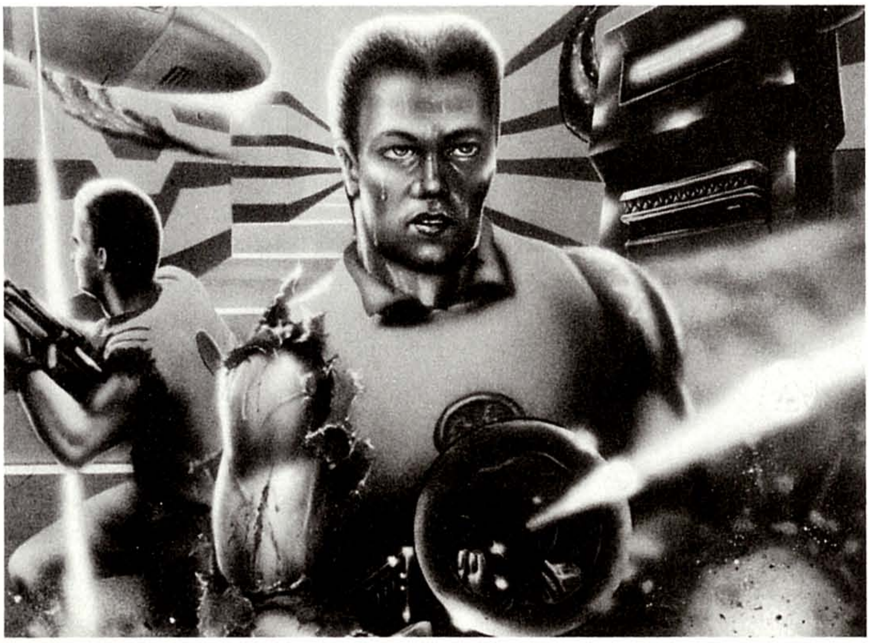
Keep alternating between trading and training until you've completed the sixth training session in which you fight against two Locusts. Now use the main menu to inspect your character and see if the gunnery and piloting ratings are 'amateur'. If the gunnery is still 'unskilled' go back to the last saved game and do it again because gunnery determines how accurate you are during battles



and is very important if you are going to use a 'mech for the rest of the game. These are the training sessions:

1. To answer the quiz, use the diagram on P.13 of the instruction manual. Choose a locust since it runs a lot faster than the rest of the mechs.
2. Choose a Wasp or a Chameleon because they have the hands you need to pick up the rubber.
3. This training includes you destroying a dummy Locust and it really doesn't matter which mech

XYBOTS



Want some infinite energy?

To obtain infinite energy from one Master Xybot to the next, simply get to Level Eight then stand one player as close to the exit hole as possible. Get the second player behind the first so that he can shoot Player One.

Player Two shoots Player One until his energy is less than 6%. On a count of 1-2-3 move Player One into the exit hole and at the same time press Fire for Player Two. The bullet should hit player one just as he disappears into the hole.

On the next level the player who went into the hole first should have an energy reading of zero. He can now get shot as often as he likes. The only minor (!) drawback is that the players can't zap so it's best to use this trick when playing a two-player game.

Peter Jones
Worcester

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Targhan

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Targhan is probably the most stunning game you'll ever play.

Targhan is an adventure-action game with more than 120 landscapes and 40 different characters. The game is playable on either keyboard or joystick.

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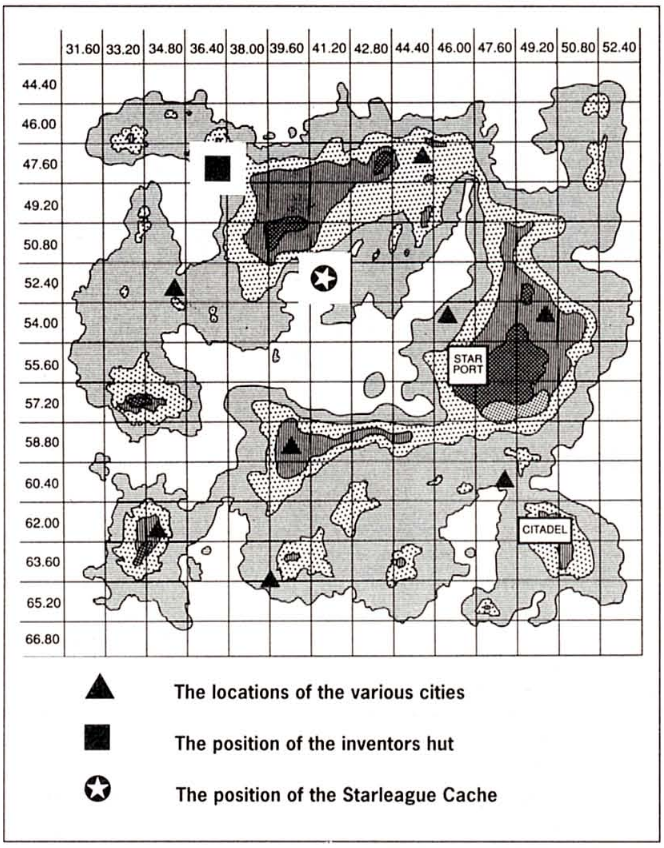
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Gainstar

▸ you choose, although the Chameleon is the most powerful.
4. Destroy a bunch of androids.
5. This is a one-to-one fight against a Locust and it's best to use a Chameleon from now on. Always stay in the forest or in water because it's a lot more difficult to be hit. Water has the added advantage that it cools down your 'mech to prevent a shut-down, which can occur if you're using your weapons a lot, especially the large laser. After this session you should go to the lounge to meet Rick and get the device you need in order to get into the Star Port later in the game.
6. Same as the last session but with two Locusts to destroy. Don't go back for any more mech training until you are excellent in all the combat skills and amateur in all mechanical and technical skills. Before going out for the seventh training session get all the money out of the Comstar building and you should have almost 4,000 C-Bills.
7. In this session, it's 99% certain you'll have to fight against Draconis invaders and your chances of survival are approximately 0% so don't bother trying to take them on. Just stay near the west barrier until the city is destroyed and the electrical barrier goes off. Now's the time to make a run for it. Save the game after getting out of the city.



2. STAR PORT

Head northwest after leaving Citadel to Star Port. The entrance is at the west wall. Get some clothes from the clothes shop so that you can travel about without being recognised. Go to the northeast corner of the city and find the Comstar station.

Repeat what you did in Citadel (don't forget to save the game after leaving the station) and as soon as you can, buy a Mapper and Holodisk player. Keep making money until you have about 30,000 C-Bills (switch investments to DefHes for small but steady profits as the other company starts to lose you money once you get about 20,000).

Go to the southeast corner and find the hospital: now learn some first aid techniques. You should be able to find the hotel next to the hospital in which you will find Rex who will accompany you for the rest of the journey. Don't be stingy – buy him the same weapons and armour you have because he'll need them.

You could now go to the arena to do some battling and earn 500 C-Bills for every victory, but my advice is to not bother because there are easier ways to earn money without running the risk of destroying your mech. Take whatever money you need from your account to get your mech repaired after the escape and then go exploring the land.

3. PACIFICA

You should find quite a few cities scattered about the land. You should also find a prison in one of the cities north from Star Port in which you should find a friend of Rex. Don't enter the prison without saving the game first because there is a chance that the Phoenix Hawk you find in there is a double agent, or it may turn out that you can't steal another mech from the prison. You'll find out if he's a double agent as soon as you put him into a mech!

If he is a traitor go back to the saved game because you're going to need all the mechs and pilots you can muster. Go to any city, find the hospital and attend a medical seminar. A doctor will ask to join you: get him to attend another seminar so that his rating becomes excellent and accept him. Then go and buy a field surgical kit. Go to the hospital again if the doctor turns out to be a double agent and recruit another doctor. Buy the two new members weapons and armour and then head back to Star Port.

4. BACK AT STAR PORT.

Apart from Star Port there is another city which contains a Comstar station but no Mechit-Lube nearby. Go to the Comstar station and get your money out (you should have loads if you've been out exploring). Go to the Mechit- Lube and have all your mechs modified twice (it'll cost about 25,000 each).

By this time a mechanic will join you, completing the party. Make the mechanic ask for training and get his mechanical skill raised to excellent. If you haven't come across a double agent yet, then this will be your man, so test him out by putting him in a mech. If he is a double agent then go back and get another mechanic once he's been killed.

Note: after the modifications, your mechs are so powerful that nothing can stand one round of attack from all three of your mechs (this is the maximum number of mechs allowed in your party).

5. DR TELLHAM

Now head northwest to find the inventor's hut which is very close to one of the cities. Before you can get to see the doctor you have to answer three questions, and as your party are all experts there should be no problem.

Head southeast to find the cave after having your Holodisk fixed. If you didn't buy a Holodisk player you could always take a look at the disk back at the barracks in Citadel or in the mayor's house in one of the cities southwest of Star Port.

6. THE CAVE

The cave is located in one of the islands southeast of the inventor's hut. You will find the underground chamber there and will need to open 11 doors with 11 different combinations of red, blue and yellow codes listed below:

1.
RED 1 BLUE 3 YELLOW 5

2.
RED 2 BLUE 7 YELLOW 18

3.
RED 15 BLUE 14 YELLOW 11

4.
RED 13 BLUE 31 YELLOW 4

5.
RED 25 BLUE 33 YELLOW 10

6.
RED 29 BLUE 12 YELLOW 6

7.
RED 20 BLUE 27 YELLOW 22

8.
RED 28 BLUE 24 YELLOW 16

9.
RED 17 BLUE 19 YELLOW 26

10.
RED 8 BLUE 9 YELLOW 21

11.
RED30 BLUE 23 YELLOW 32

I'll let you find out for yourself which combination has to be used for which door! Don't forget to turn the generator on after opening one of the doors. Go down to the cache to have a look. Go down another set of stairs to the map room and use the map in the manual to touch the planets Pesht, Benjamin, Skye, Ryerson, Kathil and Achernar in the shaded area in that order and then go to the machine near the stairs to get the white code. Now go to the signal room at the northwest corner and send a message to Katrina to finish the game.

Raymond Lam
Acton

Have you got anything to sing and dance about? Raymond Lam, Joseph Clare and G. Moffat have: they've each won themselves £50 of software! All for the price of a stamp and a bit of effort. Don't be lazy, you could be doing yourself out of £50. Any contributions should be sent to: GAME BUSTERS, AMIGA FORMAT, 4, QUEEN ST BATH, BA1 1EJ

MUSICAL MASTERY

JASON HOLBORN checks out Passport's first Amiga offering, *Master Tracks Pro.*

After the release of Microlllusions' highly-acclaimed *Music-X* the Amiga music market has positively exploded, with a wealth of new products on release or in the pipeline. Many big music industry names such as Steinberg, Intelligent Music, and now California's Passport Designs Inc, have turned their attentions to the Amiga.

While Passport is a new name in the Amiga market, their sequencer system *Master Tracks Professional* has been available for a number of years on the Macintosh and Atari ST and is favoured by many top musicians. Now in its third revision (Version 3.5 to be precise), *MasterTracks'* enviable reputation is sure to win it followers against its main rival, *Music-X,* which has now become the yardstick by which other Amiga music software must be measured.

Mac Meets Amiga

Master Tracks was originally released on the Macintosh and, although Amiga Intuition is used extensively, the user interface still retains a very Macintosh-like feel. This isn't neccessarily a bad thing, but unfortunately screen update is more than a tad slow at times, which can be annoying when you're trying to get on with the serious business of being creative.

Master Tracks is split up into several distinct sections, all of which inhabit their own separate windows. For example, all 64 tracks are displayed within a 'Track Sheet' window which can display a maximum 15 of 64 available tracks at any one time.

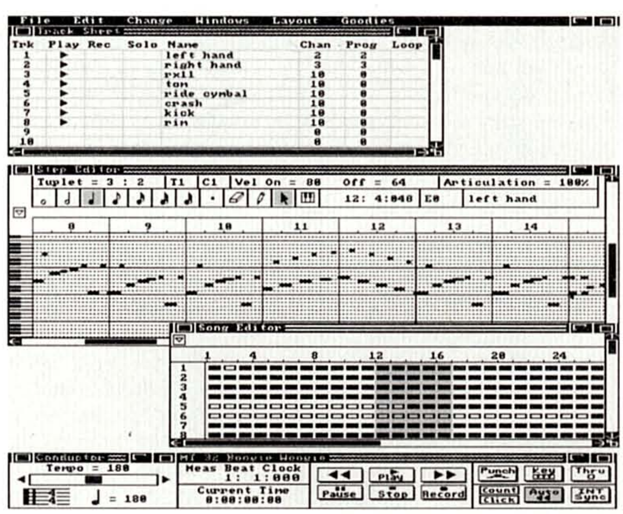
The program allows a certain amount of customising: you can arrange the windows on the screen and have their positions saved to a 'preferences' file. When *Master Tracks* is next loaded, the windows will instantly move to their new positions. This kind of customising is quite common on the Mac, but it's the first time I've seen it within an Amiga program.

In Control

Like nearly every other computer-based sequencing system under the sun, *Master Tracks* uses the now-familiar tape transport controls to control the more common aspects of the sequencer. All the standard controls are there – Play, Record, Pause, Stop and Rewind/Fast Forward – plus a few extra: Key, Auto, Thru, Count In, Click, Int Sync and Punch.

Most of the extra controls are fairly self-explanatory, but here's a quick run-down of the less obvious ones. Firstly, the 'Key' option, once selected, will make *Master-Tracks* wait for MIDI note activity (either from your MIDI keyboard or from another sequencer) before recording. 'Auto' is simply an 'auto rewind' function that automatically sets the counter back to the point where recording commenced. 'Click' produces an audible metronome which is played through either the Amiga monitor speaker or MIDI. 'Thru' channels MIDI data received back out through the 'MIDI Out' output, which is all-important when using a mother keyboard to control rack-mounted sound modules.

Hidden away in the corner of the Transport window is the 'Int Sync' option which allows you to set the type of synchronising signal used by the sequencer. Three types are available: internal sync (the default setting), external sync or MIDI time code. *Master Tracks* will happily synchronise itself with SMPTE time code formats including 24, 25, 30 frame and 30 drop frame (SMPTE is simply a time code used within the Film industry to sync music to film). As such, time is displayed in terms of both beats and measure (*Mastertracks* is precise to 240 ticks per quarternote) and as SMPTE 'real' time.



■ **Editing from a high-resolution screen display. The *MasterTracks* window system has an extremely Macintosh-like feel to it.**

Record Factory

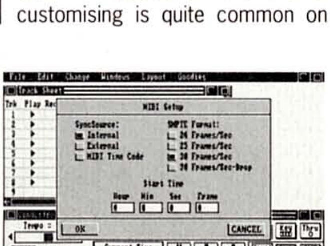
Recording a sequence is simplicity itself: just select the track that the sequence is to be recorded into, click on the 'Record' button and you're away. Once you stop recording, your new sequence is then automatically stored into the previously selected track. You can then set both the MIDI output channel and the default program (sound patch number) to be used by that particular track.

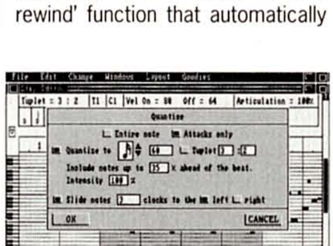
MIDI data can either be recorded on a single MIDI channel, or on all channels. The ability to record on multiple MIDI channels is particularly useful when transfering a performance from one incompatible sequencer to another, since all tracks should remain in time with one other (this is not always the case, as notes do tend to wander when playing a particularly complex arrangement).

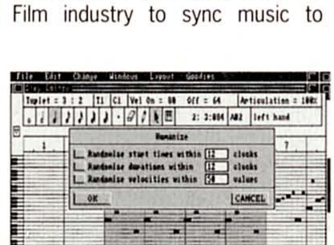
Close To The Edit

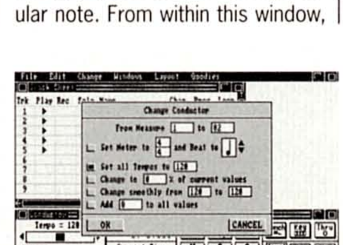
Any one of the 64 tracks can be edited using *MasterTracks'* powerful Step Editor. The editor combines the ease of use of a *Music-X*-like bar editor and the precise control of an event editor, all within one window. Using the graphic representation of your sequence, notes can be dragged around the grid, quickly and easily altering both the start position and pitch of any note. Whole groups of notes can be cut, copied and pasted down by simply highlighting them with the mouse. New notes can also easily be inserted, and existing ones removed.

Double-clicking on a single note brings up the event editor window that numerically displays the MIDI event data for that particular note. From within this window,









you can easily change the start time, pitch, note on and off velocity, duration and channel of any single note. It would have been nice to have had the option to display event data for the entire sequence, instead of just a single note... Oh well, can't have it all!

As you would expect, groups of notes can be quantized to re-align their start times to a specified time 'grid'. As well as the bog standard quantization options, *MasterTracks* also lets you to shift the start times of notes slighty back or forward to allow you to create sequences that are slightly ahead or behind the beat.

Getting Graphical

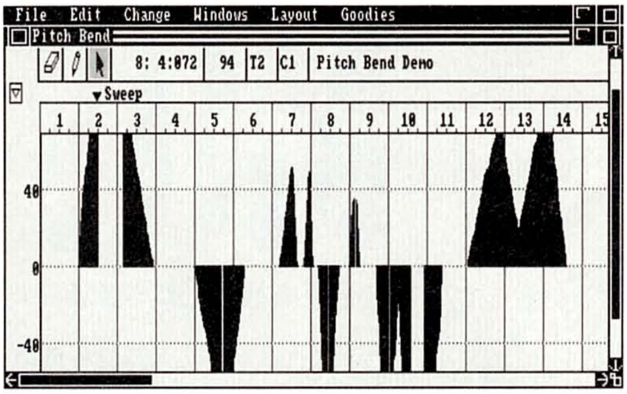
Notes aren't the only MIDI events that can be edited within *Master Tracks*. In fact, if you can think of a particular MIDI event, chances are that *MasterTracks* provides an editor for it! For such events, *MasterTracks* provides what it calls MIDI Data Windows, which are basically graphs that map continuous MIDI data of a particular type. For example, pitch bend, modulation, channel and key pressure are handled within their own separate MIDI Data Windows. Editing such events is simple: just draw a curve using the mouse and the resulting MIDI data is automatically created.

Composers' Corner

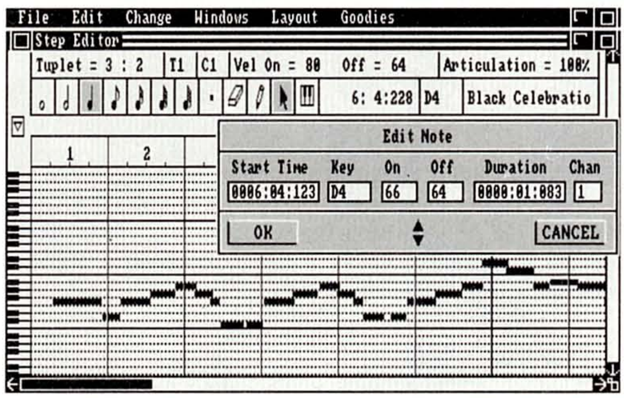
One of the main complaints levelled at *Music-X* was the lack of a dedicated Song Editor (or 'arrange page' if you're a Steinberg fan). Thankfully, *MasterTracks* does include such an editor which should keep even the most demanding of composers happy.

Like the Track Sheet window, the Song Editor displays a table of tracks in which each track is listed on a separate row. However, unlike the Track Sheet's alphanumeric display, the Song Editor displays each track as a series of horizontal blocks. Each block represents a single measure and as such, sequence segments can be moved, copied, pasted and whole new sequences created by using segments from other sequences.

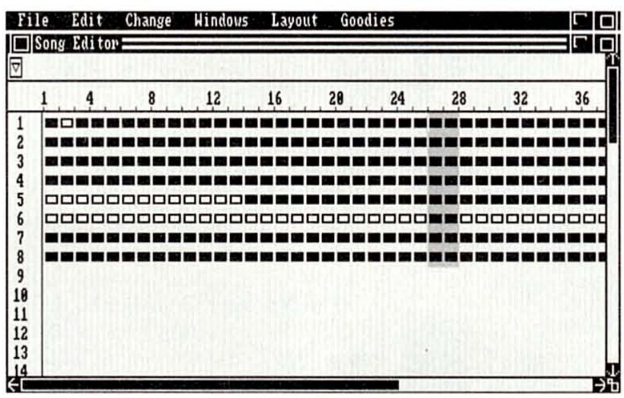
Unfortunately, the smallest unit available for editing changes is the measure, which is rather restricting at times as sequences can only be placed on measure-aligned boundaries. Although this seems restrictive, any restrictions can easily be worked around by using the Song Editor in close conjunction with the Step Editor.



■ **Controlling the pitch bend of an individual note is made relatively simple with a system of on-screen graphic display.**



■ **With a keyboard part loaded in, editing can commence. Here a note of 'Black Celebration' is having its On velocity altered.**



■ **The song editor represents a series of sequences as consecutive blocks, so that they can be rearranged wherever appropriate.**

Goodies

As an added bonus, *MasterTracks* includes several 'extras' not normally found within an Amiga sequencer. The first is a System Exclusive filer that allows you to use your Amiga to store system exclusive data such as synth patches, drum machine patterns etc. The filer is deliberately simple and will therefore only accept SysEx bulk dumps without handshaking signals.

MasterTracks also includes an intriguing 'Fit Time' option that lets you stretch or squeeze a section of music so that it fits exactly into a particular amount of time. This is achieved by scaling all tempo settings proportionally, therefore preserving the 'feel' of the sequence.

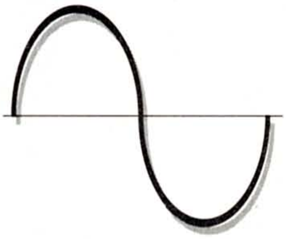
Most interesting of all is a Humaniser option which attempts to make sequences sound less rigid by randomly shifting the start time, duration and the velocity of each note. The degree of randomising for each of the three note attributes can be set by designating how many clock ticks the particular attribute can vary.

Conclusion

MasterTracks is undoubtedly a powerful, professional sequencer system that deserves to do well. In terms of features, *MasterTracks* stands up very well against its main rival, *Music-X*. However, where *MasterTracks* really scores is in song arrangement, due to *Music-X*'s lack of a dedicated song arrangement page. Unfortunately, *MasterTracks* also fails to offer any form of score editing, which is an unforgiveable omission from a package of this price.

The program did seem rather buggy at times. For example, if you touch your MIDI keyboard while *MasterTracks* is loading, the program gurus every time. Also, when memory starts to get tight, *MasterTracks* often refuses point blank to take any notice of any menu selections and, most worrying of all, *MasterTracks* can often even refuse to save your work. Some form of low-memory warning is definitely needed!

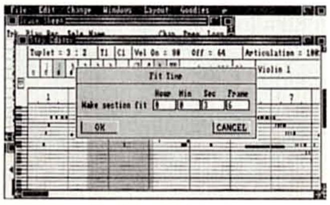
I'm quite sure that professional musicians will love *MasterTracks* but for the average home user *Music-X* is both friendlier and a lot cheaper. When two such programs are so closely matched on features, price really is the deciding factor. If you can afford the extra cash for *MasterTracks*, and you're prepared to put in the extra time to master it, then you're sure to find the program a powerful addition to your MIDI setup: otherwise *Music-X* still has it. ■

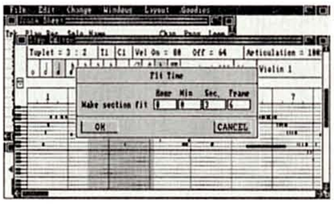


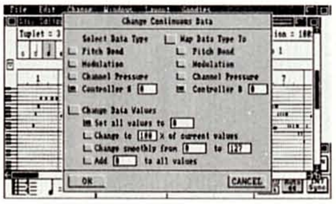
MASTER TRACKS PRO.

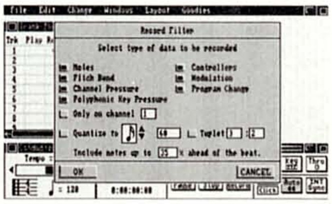
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MOVE IT!

BRIAN LARKMAN checks out an editor for animation sequences.

With a name like *Professional Animation Sequence Editor, P:A:S:E* from Pure Graphics almost reviews itself. Now that would be taking 'ease of use' a little too far, so perhaps we ought to do a bit more than just say that it edits animation sequences professionally!

With the recent proliferation of animation packages, the need for a single, flexible means of editing the sequences produced by these many programs is obvious.

Deluxe Paint III, Photon Paint 2, Sculpt Animate 3 and *4D, VideoScape, C-Light, Design 3D* and most other 2 and 3D animation packages are designed to produce sequences of frames, delta-compressed into some form of Anim format.

Once they are squashed, editing the sequence becomes quite difficult. The playing speed and direction (loop or ping-pong) can be altered later in some 'animplayers', and reloading the anim or its original IFF frames back into *DPIII* or *PP2* allows some laborious re-shuffling, but true editing of groups of sequences is almost impossible.

P:A:S:E to the Rescue!

P:A:S:E allows any sequence of IFF files in ANY resolution or mode to be loaded and delta compressed into its own very flexible form of anim file, known as a DAF (Difference Algorithm File). Once loaded and compressed, the frames can be cut, copied and pasted freely and repeatedly to choreograph a much longer and more complex sequence.

The time that each frame is displayed – known as its 'dwell time' – can be set for each individual frame or group of frames. The overall playback speed can be varied, any one group of frames can be looped repeatedly a fixed number of times at a different speed and the pre- and post-loop speeds can also be set (differently). All these features are controlled through an attractive and intuitive mouse-only interface that is quickly mastered.

More often than not, however, it is necessary to tweak an almost-finished sequence while it is playing. *P:A:S:E* provides a 'step time' editing mode that allows a running animation to be paused and its parameters adjusted via keyboard controls. To assist this process, frame data can be displayed as an overlay at the bottom of the screen.

No Standards

Despite several attempts to define a standard, there are at least 5 types of ANIM files currently used on the Amiga. The latest, ANIM5, has perhaps the best chance of being adopted and it is the one supported by Commodore themselves as well as Electronic Arts for *Deluxe Paint III.* Even Byte-By-Byte now seem to be using it for *SA4D Jr* after going it alone for several years with *SA3D* etc.

Unfortunately *P:A:S:E* uses an entirely different method of compression that allows its DAF files to be altered and accessed later. This is not quite as bad as it sounds for it should be quite easy to exchange between the formats. *P:A:S:E* has a very open architecture that allows communication with 'Satellite' modules and these could include several types of conversion.

To produce the DAFs at the moment, a series of IFF pictures is loaded by the Create function and delta compressed. This sequence of originals must be numbered correctly for the process to work and this provides the biggest problem, since different animation systems use different numbering conventions. It should be possible to 'batch rename' with AmigaDOS: but apparently it is not. Surely someone will come up with a simple utility to convert one pattern of filename to an alternative one using 'wildcards'. This would save a lot of hassle.

The Last Frame

Overall *P:A:S:E* is a straightforward and useful editor that seems to do its job well. The only competition is from *AniMagic* (Aegis) which is much fancier and more complex, but can only edit ANIM files. *P:A:S:E* has the virtue of simplicity yet is still quite powerful. It will probably be used frequently here over the next few months so periodic accounts of its long term performance will be reported in the graphics section of *Amiga Format.* ■

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Music-X accepts and enhances standard IFF files, and can transfer them to score writing packages such as Dr T's Copyist.

Music-X also includes extras which other packages would require as expensive extras. They are 1) 8-bit, 16 sample, 4 voice sampler (IFF format); 2) 16x16 MIDI patchbay for redefining MIDI channel status; 3) 4 editor/librarians and 4) Keyboard mapping editor and MIDI monitor display.

All this in glorious colour with many more features than described here. A colour brochure is obtainable from us on request. Music-X requires a Commodore Amiga with at least 1mb of memory. Micro Music summed Music-X up with "Music-X is without doubt the best piece of MIDI software to date, Buy it!"

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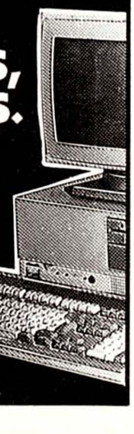
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RANDOM SAMPLE

JON BATES cuts up and mixes in the hi-tech world of sampling.

To even the most undiscerning of louts, the sound capabilities of the Amiga are enhanced greatly by its ability to replay digitised sound. Much of the sound coming from games is sampled anyway, hence the authenticity, and you can buy sequencers that will use sampled sounds as part of their staple diet.

But how do you get the sounds inside the machine in the first place? Simple, you buy a sampling package. As to which one you choose... well, pull up a chair, stuff another log on the fire (OK, stick 10p in the meter) and settle back while we place the sampling packages currently available on the Format test bench.

The packages vying for attention and odious comparison are Pro Sound Designer, A.M.A.S. and Future Sound 500.

'BUT HOW DOES IT WORK, MISTER?'

Essentially a sampler works much in the way that a CD player does, but in reverse. Whereas a tape recorder uses a continuous magnetic pattern on the tape, a sampler in effect creates a series of individual slices of sound. If you can imagine sound as a tangible object with a shape then the digitiser is like a bacon slicer. It slices the sound up into very thin slices which can then be converted to digital code conveying all the relevant details of volume, pitch and harmonics.

Each slice is given a file number and stored away. Once the sounds are in digital form, the Amiga can sort out and re-order them as pure data. However there are one or two other factors to be taken into consideration. Your ears are not easily deceived by slices of sounds. If you sampled at the same rate that a motion picture works at – usually 34 frames per second – the result would be a very garbled mess. The human ear needs a minimum of 100 times that amount to start being convinced. For quality you will need about 1000 times that rate, a sample rate of 34Khz per second. A CD player is converting data at 41.5 Khz per second.

The reason is that every sound is not merely one pitch but a complex combination of harmonic frequencies reaching up and above the threshold of the human ear (which is about 17Khz). Now, it happens that to reproduce a frequency it must be sampled at twice the rate – a sound at 15Khz will need a sample rate of 30Khz. Hence all the number-crunching figures and the large memory and fast manipulation of data.

The sound is stored as a series of slices, but there is a need for some fancy maths to calculate a smooth curve from the peak of one slice to the next (known as quantization). More complex routines are also necessary to remove unwanted inharmonic frequencies that are generated by this process and so you have to have what are known as anti-aliasing filters. Fortunately the Amiga chip is well equipped to convert digitised sound data to the stuff that your ears will accept.

All that is required is the means to create the data in the first place and hence the bolt-on digitising modules. These convert the sound into 8-bit data. State-of-the-art dedicated samplers such as the Akai S1000 work on 16-bit and require large amounts of memory.

For live work on, say, your next headlining tour (!) a hard disk is essential as each sample will take about 40 seconds to load up. But your Amiga will suffice very nicely thank you very much and at a fraction of the cost. One thing to bear in mind is that although you might be impressed with the rate that the hardware can sample the sound, the Amiga is only capable of playing back to a maximum of 28Khz.

PRO SOUND DESIGNER

Pro Sound Designer is handled by Eidersoft and is a very comprehensive package. If possible, go for the Gold Edition, which has slightly superior routines. It comes complete with the stereo sampling module which plugs directly into the parallel port (tough if you have a parallel printer!) and comes complete with a gender bender which you will most certainly need for the 500 and 2000.

The copious documentation (which smelt strangely of pineapple!) informs you that since the parallel port on the 500 is slightly recessed, so the gender bender was their way of getting around the problem. Although the digitising module does sort of wave around in mid-air a bit, it does nevertheless do the job: I found it best to put a book of suitable thickness under the module to support it.

The software is also compatible with other Amiga digitiser hardware such as Datel and FutureSound. The program itself is not copy-protected but is tied to the manual: it asks you to put in a keyword listed by page, line and number. Very sensible indeed.

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A.M.A.S. The Advanced Midi Amiga Sampler

The Hardware

A.M.A.S. is a full feature 8-BIT STEREO audio digitiser complete with a full implementation MIDI interface, all built into the SAME stylish wedge shaped hardware unit which fully complements the computer, no messy extras are required. The digitiser accepts mono or stereo inputs via its line input sockets and is provided with an extra microphone input socket for direct vocal signal input. The MIDI sockets comprise of MIDI IN, OUT & THRU. Hardware versions exist for the A1000 and A500/2000 formats.

The Software

THE SAMPLER/EDITOR

The ultimate graphics/mouse user interface. Left, right or stereo sampling. Sampling rates of up to 28Khz. Dual real time oscilloscopes, (1 for each channel.) Real time spectrum analyser. Auto record trigger on input level. Up to 8 'BANKS' on 2 Meg machines (200-250k req. per bank) Up to 10 stereo samples per bank. Load & Save samples in RAW or IFF data formats. Filter ON/OFF for computers inbuilt filter where applicable.

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FROM THE TOP

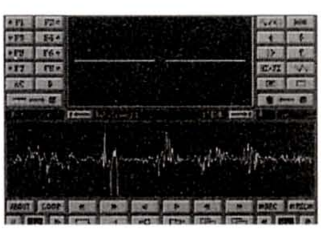
After a jolly intro page with a suitable rewinding noise, the main screen appears. The screen buttons are all familiar icons and not too hard to work out without the manual. Most of these are accessed from the left mouse button: the right-hand button is used where there may be a choice of commands. Any button selected is highlighted and requester menus pop up where appropriate.

The screen is divided up into areas. The functions keys on the top left are where the sampled sounds are stored, and here they can be matched in stereo pairs; four of them in all. You can of course opt for eight separate mono samples or any combination of stereo or mono samples.

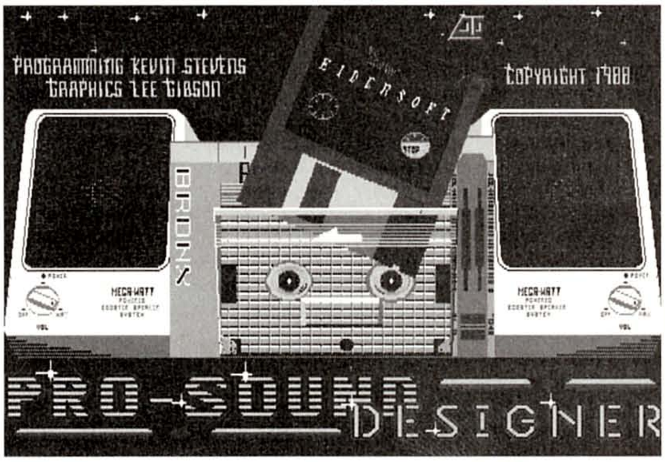
Since the Amiga has only four channels of sound the program predetermines which channel they will be issued through and also pairs up the samples so that two are assigned to each channel. You can only play one of the selected pair at a time: so samples F1 and F5 are assigned to the same channel so they cannot sound together.

MONITORING

In the upper centre is the monitor window. This effectively lets you set the level of sound coming into the program – failure to get this right will result in rubbish samples. To use this window the controls are set to the right-hand upper side of the screen. In monitor mode a central oscilloscope type of display lets you know whether



■ **The main editing screen.**



■ **The "jolly intro page with suitable rewinding noises".**

the signal level is too high or too low to meet requirements.

Unusually, there is also provision for hearing the processed sample before it is recorded. By turning the speaker icon on you effectively hear the digitised sound through the speakers. However it does take up quite a bit of the processor's time and so the screen turns a jolly shade of green with no wave displays in this mode.

The sampling rate is selectable from 1 to 28 Khz in steps of 1 and it is best to experiment with this in the monitor mode so that you can hear the results before you record. You can store each sample at any rate you like but if stereo is your aim then you are kept to a maximum of 17 Khz which is slightly limiting. All samples can be stored on disk in IFF format and stereo samples are simply stored as two mono pairs.

RECORD AND PLAY

Recording the sounds can be achieved by hitting the record buttons, one for mono and another for stereo, which at first glance look identical. On closer inspection there is a difference with two little square icons equaling stereo. The screen turns gold and the sound is heard through the speakers. To start sampling you press the left mouse button – press again to finish, monitoring the sample all the time via the speakers.

Playback has several options. Hit any key for playback of the whole sample. The play button with the left mouse button will playback between the editing cursors and if Loop is set on it will play continuously. Playback with right mouse button is the same as hitting any key. You could opt for auto record which sets the level at which recording will start. There is also a reasonably useless auto play which sets the sample off when a certain volume is reached on the inputting device; 'useful for scaring granny' says the manual. Hmm. Very good.

LOADING AND EDITING

The samples load complete with the last editing cursor positions and the sample rate. The program will let you edit and load samples whilst current samples are playing. The sampled sound is displayed in the lower half of the screen and like many other sampling programs, all editing hinges around the two red upright lines which you define sections of the sample with. These can be moved by either small or large amounts by dragging or clicking on the sets of arrows – one of which searches for 0 bytes, excellent for locating loop points.

Once an area of sound is defined it can be reversed, cut out, copied and inserted or replaced and merged over the top of an existing section of sound. By selecting the advanced editing features a new window slides into place and the buttons allow you to increase or decrease the volume of the set area, expand or shrink the sample to fit the memory space and also to save to a temporary buffer.

The area selected for editing can also be magnified for fine editing and you can also alter parts of the sample by drawing them in to smooth over awkward loop points. Loop and volume are set individually for each sample.

FINALLY

A useful feature is the ability to add an overall volume level to the sample and hence reduce the background signal to noise ratio, this is in addition to the hi-fi filter which is designed specifically for use on the A500 and B2000 – it knocks out a filter fitted to the chip on these modules and works on the sound as it is recorded. Pro Sound can also work with expanded memory and you can flip back to the workbench should you so wish.

Generally a well designed and effective package with very few complaints except that the digitising module looked a little unstable and is fitted out with a micro jack socket input which almost certainly means at least one plug adaptor waving about precariously in mid-air. ■

PRO SOUND DESIGNER GOLD EDITION

■ **£79.95** ■ **Eidersoft, 0234 273000**

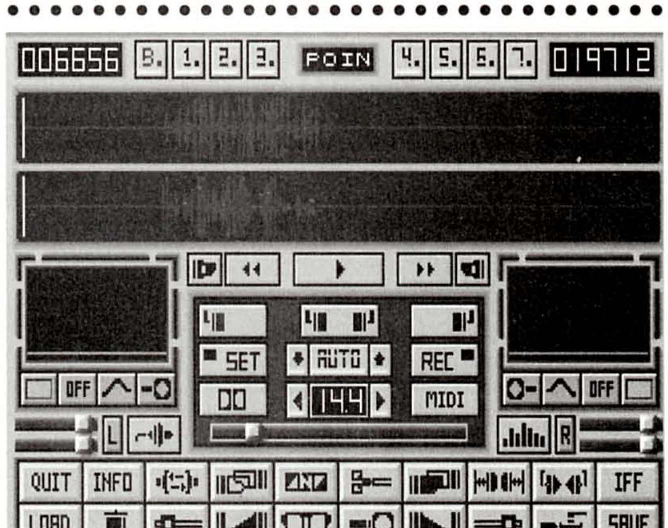
A.M.A.S.

The Advanced Midi Amiga Sampler from Microdeal comes complete with hardware that is sensibly housed in a separate box connected to the Amiga by ribbon cables, so no wobbly interfaces.

The reason for two cables is that the hardware is also a MIDI interface. This will run with any other standard MIDI software so you are in effect purchasing two interfaces in one. The cables connect to both the serial and parallel ports. The inputs for sampling on it are the same as Pro Sound Designer: two phono type sockets plus a mini-jack for microphone input. MIDI is covered by three ports, in, out and thru (quaintly labelled 'thrg').

Full marks for having visible labels for the ports on the top of the interface though. This will put an end to the neck strain that is often encountered when re-plugging synths and interfaces. ➧

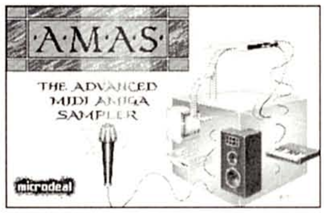
■ **A.M.A.S. is blessed with plenty of MIDI capability: but does it make editing those stereo samples as easy as it might?**



HARD STANDARD

The hardware is of a similar standard to Designer, although I did take the liberty of comparing the chips and there didn't seem to be any duplications. Certainly the results are no noisier. The features of the software would appear to match up to Designer in that it will record in mono or stereo, record with auto trigger and you can monitor the sound with spectrographs both before sampling and audibly whilst sampling.

The memory used can be up to 8 banks of 10 stereo samples apiece (er...that's 160 mono samples, lads) all of which will gobble up 200K of RAM for each bank: methinks these figures are for an A2000 and the samples are fairly small. It will save in either raw data or IFF format as well. I felt that the main shortcoming of AMAS was the editing features. The main screen, although brimming with features, was just not as easy to get on with as Designer. Although it displayed both left and right waveforms simultaneously, the actual display size was much smaller and not so visible. This made features like magnifying the sample for spot-on editing a little more myopia-inducing than was comfortable. Neither could I get to grips with the idea that you could only magnify the centre section of the sample. It meant shuffling the sample back and forth across the screen until you found the section you wanted. Surely it is much easier to have the sample display remain static and then hone in on the section you want with a block cursor.



■ The title page of A.M.A.S.

ADVANTAGES

One redeeming feature was the 'shrink' option which compressed the data quite successfully without losing too much audio quality: if you shrink the sample by 50% you would need to halve the playback rate.Where AMAS scores mega points is the MIDI capabilities. With the same program you can access the wide range of MIDI playing options. Sensibly you can also monitor the sounds from the qwerty keyboard as you assign samples to relevant key areas (keyboard split) and the required MIDI channel.

You can have either four mono or two stereo samples set up at the same time, which is the maximum that the sound chip can cope with. The are some limitations. Each sample can only be shifted either one octave down or two up from the external MIDI keyboard. This is fair enough as most samples sound pretty naff when shifted too far out of range. They are not touch sensitive (that would be pushing your luck) and sadly they don't respond to pitch bend which would have been a nice option. Generally what AMAS lacks in fine detail on the editing department it makes up by having built-in MIDI capabilities. ■

A.M.A.S.
■ £89 ■ Microdeal, 0726 65422

FUTURESOUND 500

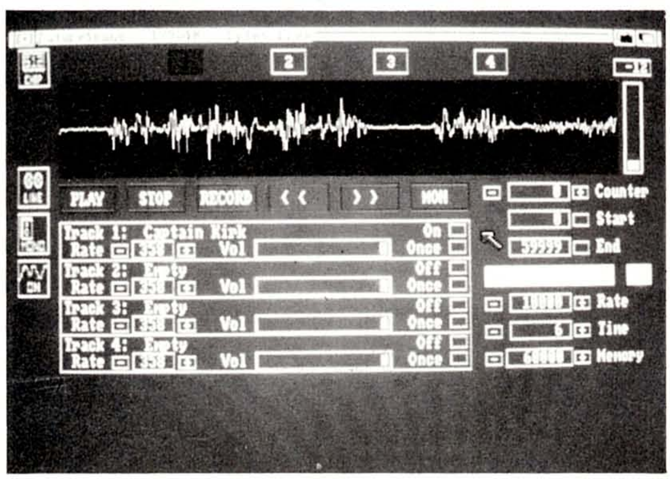
Now here's a funny thing. We now have a sampler whose sonic quality is quite a bit ahead of the rest. FutureSound 500 was reviewed in Issue One and at the risk of repeating what Rachel 'Wide Person' Deckard wrote then I will agree that the hardware is definitely far superior.

It is also pretty easy to use: as long as it is just sampling sections. It will only store up to four samples in one go and these are listed underneath the sample display with options to alter the playback rate and volume.

It will record in mono or stereo and each sample can be looped. Recording is very easy to use and you can monitor the level using the waveform display on the screen.

The big headache is the lack of any sophisticated editing facilities. The basic features are there but they are fairly simple – cut and paste, reverse and magnify. To edit you only have one moveable cursor and the sample moves backwards and forwards across and off the screen as it magnifies up different sections. This is most frustrating as you can quite easily miss the section you want to edit: it falls off the edge of the screen into a hitherto undiscovered and non-astronomical black hole!

For beginners it is not too bad but for anything more grand it is simply not equipped for the job. FutureSound 500 will save in its own 'JukeBox' style, or in the more standard IFF format. ■



■ Futuresound 500 in action: the current sample waveform on screen.

FUTURESOUND 500 ■ £79.95
■ Third coast Tecnologies
■ 0257 426464

While prices quoted are usually those recommended we quote them only as a guide.

TRILOGIC SOUND DIGITISER

A quick mention for Trilogics' Audio Digitiser. This is a hardware only module that is compatible with most software available for sampling on the Amiga. The results, to be honest, are only as good as the hardware supplied with the original programs. However it does provide a useful sampling addition to programs such as *Audiomaster* and *Sonix*, bearing in mind of course that you will be limited by the editing that the software has to offer. The Digitiser only has one input socket with adjustable sensitivity and unfortunately has no MIDI ports.

TRILOGIC SOUND DIGITISER
■ £37.99 ■ Trilogic, 0274 691115

THE VERDICT

Frustration was, I'm afraid, the final result. Frustration because what I want is a little bit of each package. Each one has a definite strong point: ProSound has very good editing but MIDI is only available with extra hard and software, AMAS has very good MIDI but lacks the fine detail in editing, FutureSound 500 has brilliant sound but very weak editing and no MIDI. Just for the record the software for all three is compatible. However I leave it up to you as you will have some idea what purposes you will be putting the package to. If it is merely to have some fun and also put samples into games and your own programs then FutureSound has it. But for MIDI AMAS must win. For extra fine editing a la Acid House you need Pro Sound.

Finally 'a lorra thanks' to Tony Clarke at Sabretech who robbed one of his customers of their FutureSound for review in this issue: we couldn't find one anywhere within the deadline times. He will be only to happy to sell you the above products and more on 01 760 0274.

The next *Amiga Format* will contain a run-down of as much Public Domain as we can lay our sweaty paws on. Stay tuned and write to let us know what you think, or what you need to know.

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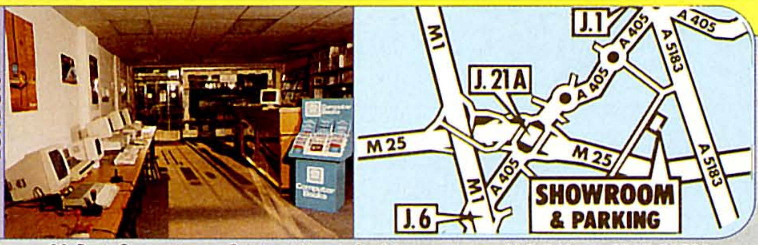
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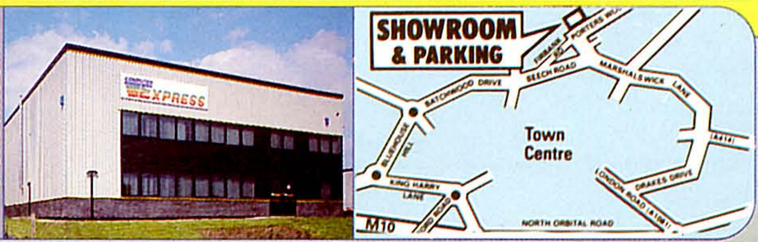
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HARD AND FAST

The Amiga certainly isn't starved of hard drives, so is there really space in the market for another? JASON HOLBORN checks out Xetec's latest.

I remember the days when the Amiga was young. Such things as hard drives were mere dreams and even if you could find someone who actually produced one, you could wave goodbye to a grand for just a single 20-Meg drive. Thankfully, those days are long gone and the Amiga market is positively bursting with drives of all types. The Xetec 'FastTrack' range of drives has been available in the States for a number of months now and has gone down rather well. Now they're available in this country, courtesy of Third Coast Technologies.



■ The 2000 hard card is fitted internally into the 2000's case.

The Hard Facts

The FastTrack drives are available in several configurations depending on your machine type and pocket. For 500 owners, there's an external system consisting of a small SCSI adaptor and separate drive enclosure containing a 40 Mb drive, controller card and power supply. On the other hand, 2000 owners can choose between either a bare FastTrack autobooting hard drive controller (and then use their SCSI drive) or a complete 'hard card' consisting of the FastTrack controller and a Rodime 40 Mb drive.

Although the Xetec units look expensive when compared to budget units such as ASAP's Amdrive, their specification leaves the competition standing. For starters, FastTrack employs custom DMAx hardware to allow data transfer rates of up to 45 times faster than floppies (now that's fast!) For an extra spurt of speed, the 500 drives are also available with an optional 64k 'lookahead' RAM cache which speeds the drive up from an impressive 25 milliseconds to a mind-blowing 11 ms.

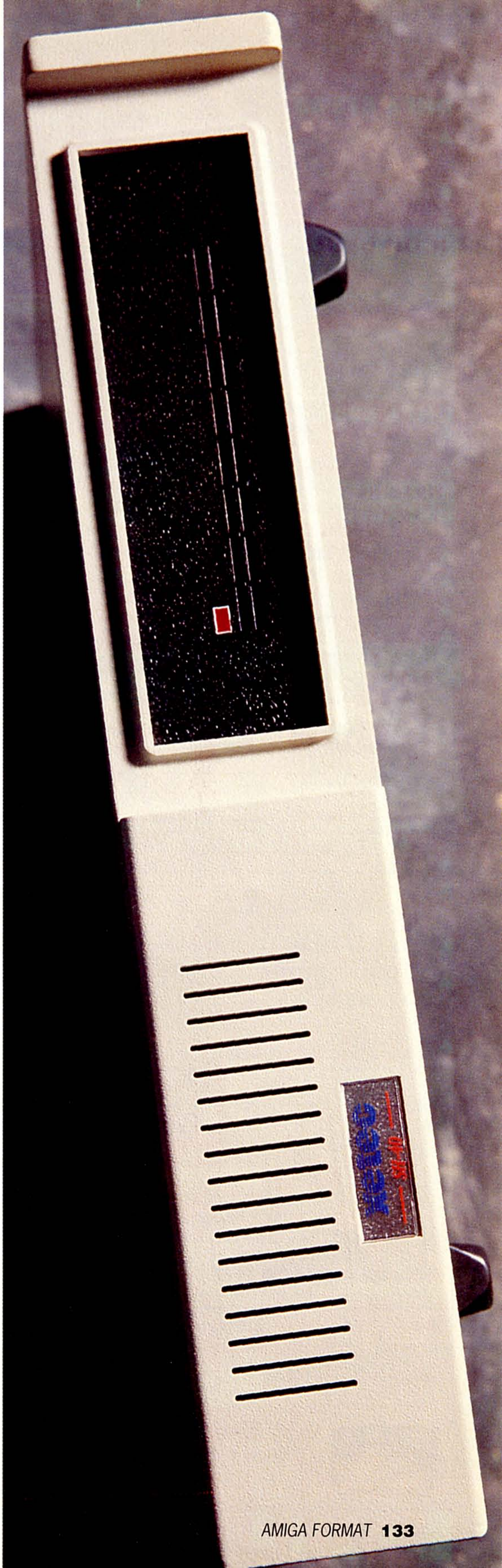
Like Commodore's A590, the 500 host adaptor offers expansion space for the addition of a 4 Mb RAM expansion (approx £150 for an unpopulated board) and a maths coprocessor (approx £150 again). Xetec also produce a streaming tape backup subsystem which, like all other Xetec add-ons, is available from Third Coast, the UK distributors.

Softer Approach

Unlike the vast majority of comparable units (including those often retailing for thousands of pounds), the Xetec units come bundled with some of the best hard drive support software you're likely to encounter. As well as the usual SCSI tools to carry out menial tasks such as formatting, partitioning and archiving, the most impressive feature is that instead of having to tell the system about any new drives you connect, the software automatically detects its presence (bit like autoconfiguring memory) and then allows you to configure it ready for use. Very handy.

Conclusion

The Xetec range of drives certainly aren't the cheapest hard drives you could pick up but, as the old saying goes, 'You gets what you pays for, matey'. However, the combination of RAM expansion and maths coprocessor options, ultra fast data transfer and some of the best support software available makes the Xetec range worth considering. ■



MONEY MATTERS

The Xetec drives are available in a number of different capacities (22, 32, 50, 72, 88 etc). The basic A500 FastTrack system consisting of a 22 Mb drive (25 Ms access time) and SCSI host adaptor will set you back £449, while the top-of-the-range system (229 Mb) will cost you £1795. For superior performance, certain capacities are also available with an optional 64K 'lookahead' cache which more than doubles the drive's already impressive access time.

Like the 500 version, the basic 2000 hard card is available for £399 for a 22 Mb drive plus controller card. This drive can either be mounted onto the controller card itself or alternatively onto the 2000's additional 3 1/2 inch drive slot. For further pricing, contact Third Coast on 0257 426464.

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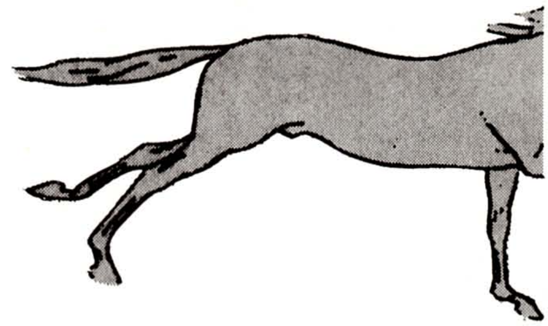
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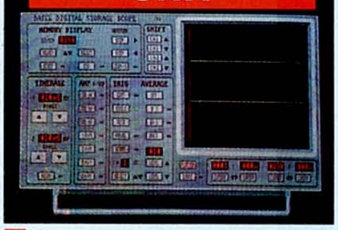


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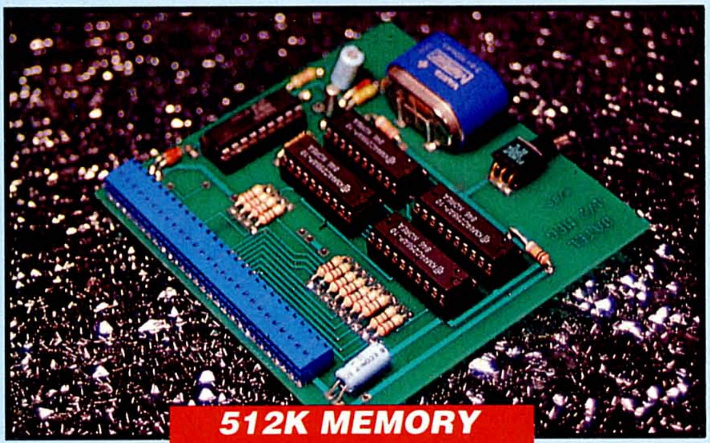
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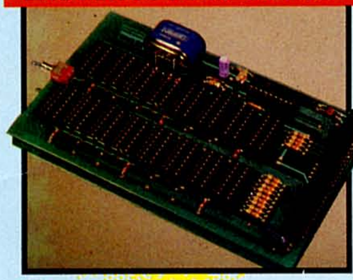


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A PAL FOR LIFE

JASON HOLBORN checks out a Word Processor that has been causing quite a stir Stateside.

Word Processing and Database Management are central. Like it or not, regardless of how many millions of pixels the Amiga can throw onto the screen in a single frame, without these two basic applications the Amiga doesn't stand a chance up against the business big boys. Unfortunately, setting up even the simplest home office system isn't a cheap affair and so a package that seems to offer both for less that £130 is always worth investigating.

Pen Pal is the latest arrival on the Amiga word processor scene, from the American software house Brown-Wagh Publishing, that combines the editing power of a word processor and the data management capabilities of a database with the kind of layout control previously only found in expensive desktop publishing systems, all within one simple-to-use program.

Many of our older readers may remember Brown-Wagh's previous word processor, Softwood's *Write & File* system, which scored well in Issue Two of our parent magazine, *ST/Amiga Format.* While Write & File was a indeed a powerful word processor system, it lacked any form of graphics import facilities. Softwood certainly seemed to have listened to our criticisms, and *Pen Pal* is the result.

First Impressions

The most immediately impressive thing about *Pen Pal* (in fact Softwood products in general) is the impressive user interface. Unlike most similar programs, Softwood have gone to great lengths to make *Pen Pal* not only intuitive, but also so easy to use that even a complete beginner could use the majority of the program's features without having to refer to the manual. Even if you do encounter difficulties, *Pen Pal* includes full online help facilities to save time which would have normally been wasted searching through manuals.

Most features within *Pen Pal* can be accessed in a number of ways, either through menu selection, on-screen icons or, for those of you who don't like be pampered by WIMP systems, the old and trusty keyboard short cuts. One particularly nice feature is the use of a 'smart mouse' system – as soon as the pointer moves over a gadget, it turns into a text box detailing the gadget's function.

As you would expect from an Amiga word publisher, *Pen Pal* displays everything in full WYSIWYG (what you see is what you get). At any time while editing your document, you can display a representation of the full page as it will look, just as you could with a DTP package.



■ **Just as in a supposedly more powerful DTP package, you can view your whole page as a scaled-down representation.**





■ **Forms are easy to create with *Pen Pal's* powerful line tools.**

The Word Game

Many word processors that also try to be desktop publishers make the fatal mistake of neglecting word processing facilities in favour of more cosmetic features. Fortunately, *Pen Pal* offers all the basic editing functions that you'd expect to find in a word processor, plus a few extra for good measure.

Any text can be cut or copied by highlighting it with the mouse, and then pasted back into either the current document or even another document running in a separate window. Many of these editing features have a very Macintosh-like feel to them. For example, several of the keyboard short cuts, such as [Amiga] + [X] for cut and [Amiga] + [V] for paste, will be familiar to Mac users worldwide as these are the adopted standard for many Mac word processors and DTP packages. Also, Mac-like, you can highlight either a single word or sentence by clicking the mouse button either once or twice respectively.

Pen Pal has a powerful spell checker which consists of three separate dictionaries: a 1,500-word common dictionary, 110,000-word main dictionary and an empty user dictionary for storage of your own commonly used jargon. Unlike *Write & File,* which often encountered problems when spell checking on even a 1 Megabyte machine, *Pen Pal* will happily spell check most reasonably-sized documents. Unfortunately, *Pen Pal* doesn't feature a Thesaurus, which is a sad omission.

One particularly interesting feature is the 'Statistics' option which provides information such as the standard word count, average characters in a word, average words in a sentence, sentences in a paragraph etc. The most impressive aspect is the inclusion of a 'Reading Level' option which attempts to



rank your writing's readability by education level. This can be particularly useful when assessing the suitability of your writing for a particular audience.

Graphics Support

Unlike most word publishers, *Pen Pal* goes a lot further than just allowing the importation of IFF clip-art graphics as rectangular blocks. In the current release, *Pen Pal* allows you to use two different forms of graphics within any of your documents.

Firstly, any IFF graphics can be loaded in (including HAM!) and then sized, cropped and placed anywhere on the page. Although imported pictures are only displayed using eight colours, their colour information is internally stored for use when your document is finally printed.

Once a picture has been pulled in, you can define how text is to run around it. Just as in a DTP package, text can either be run down an adjacent left or right column or contoured around the image.

Pen Pal also employs several structured graphic tools to allow you to tastefully use objects such as horizontal and vertical lines, empty and filled boxes etc. Objects can be layered, grouped, depth arranged and locked just as they can within packages such as *Professional Draw* or *X-CAD*. Using a combination of the various structured graphic tools, some rather nice-looking forms can be built up with ease (*Pen Pal* even includes an option to allow you to test out the suitability of the form for actual use by entering test data!).

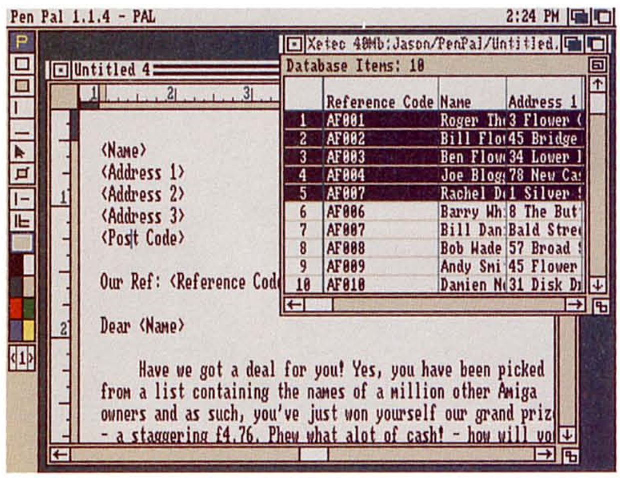
Database Management

Pen Pal's database is a fairly simple 'card file' type filing system which certainly doesn't set out to compete with such heavyweights as the *SuperBase* series.

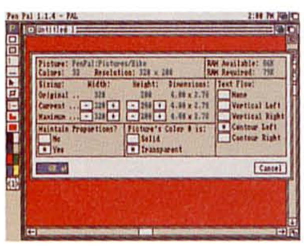
Setting up a database is a fairly simple affair which simply involves you defining the name of a field, the field type and any extra options that the particular field type may require (Calc fields require an equation, etc). One thing to note is that you cannot define the size of a field – all fields are automatically set to a maximum of 64 characters.

Once you've entered all data into your database, all records within your database are displayed at once in table form with each row displaying all the data for a particular record. At this point, any field can be selected and then its contents changed.

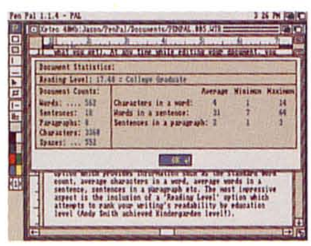
Integration is certainly *Pen Pal's* strength. Both the Word Processor and Database work well together and moving data between them is a quick and simple process. As you would expect from a word processor/database combo, its primary function is mail merging. To carry out a mail merge, you first draw up a standard letter containing the names of the fields where data is to be inserted into the document. Next you open the database while the standard letter is still open, select the records which are to included within the mail merge (*Pen Pal* includes comprehensive record filtering functions) and then select the type of mail merge to be carried out.



■ Selecting the records to be used within a mail merge.



■ *SuperBase* users will feel instantly at home with *Pen Pal.*



■ The Statistics menu displaying all sorts of useful info.

The Printed Page

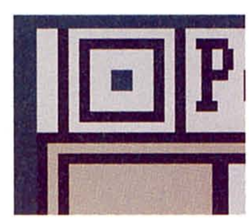
Pretty onscreen pages are all very nice, but the crucial test of any presentation-based package is the quality of the final printed output. Using standard preference drivers, pages can be printed either as a combination of graphics and the printer's own built-in fonts (*Pen Pal* is so far the first package to offer this) or, if you wish to use fancy Amiga fonts, a full graphics dump can be produced.

"But what about quality?" I hear you ask. Well, I can put your mind at rest, as *Pen Pal* produces some of the best dot matrix print-outs I've seen this side of *PageStream*. It really is a shame that Softwood didn't include PostScript and colour separation support as this would have made the output from *Pen Pal* perfect.

Conclusion

Pen Pal can be quite a strange experience. When using *Pen Pal's* page layout options such as multiple fonts or graphics import, it is all too easy to forget that you're actually using a word processor rather a desktop publisher. I found myself often cursing the program because I couldn't carry out such rudimentary DTP functions as adjusting the horizontal scale of a headline or changing the leading on a paragraph. Rather than a negative aspect of the program, it is actually a tribute to the power of *Pen Pal's* page layout options that you do actually forget it is a humble word processor.

Within the short time that *Pen Pal* has been available in the States, it has already outsold every other Amiga word processor and it's simple to see why. Apart from the lack of a thesaurus, *Pen Pal* is the realisation of the dream word processor every Amiga owner has been crying out for. Even though the program sometimes seemed a bit buggy, the combination of comprehensive text editing tools, powerful layout options and an above average database deserves to make *Pen Pal* the first choice for anyone looking for a decent Amiga word processor. If we had a Format Gold award for serious software, Pen Pal would have been the first program in the six-month history of *AF* to receive it! ■

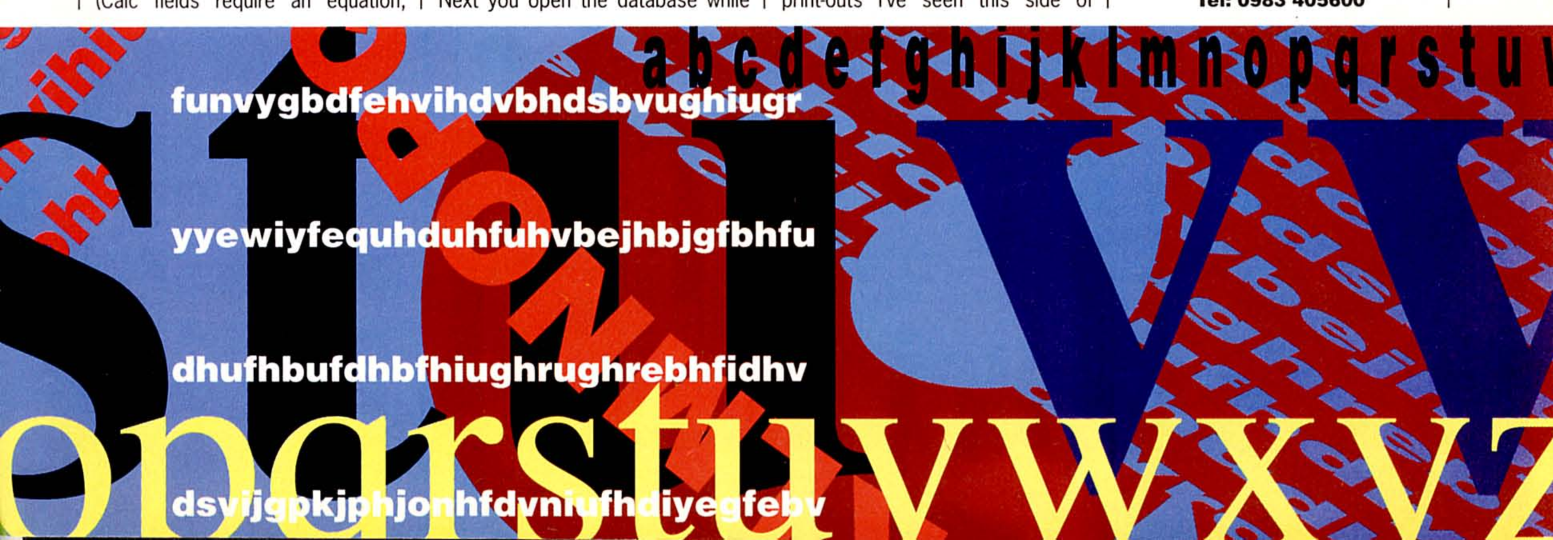


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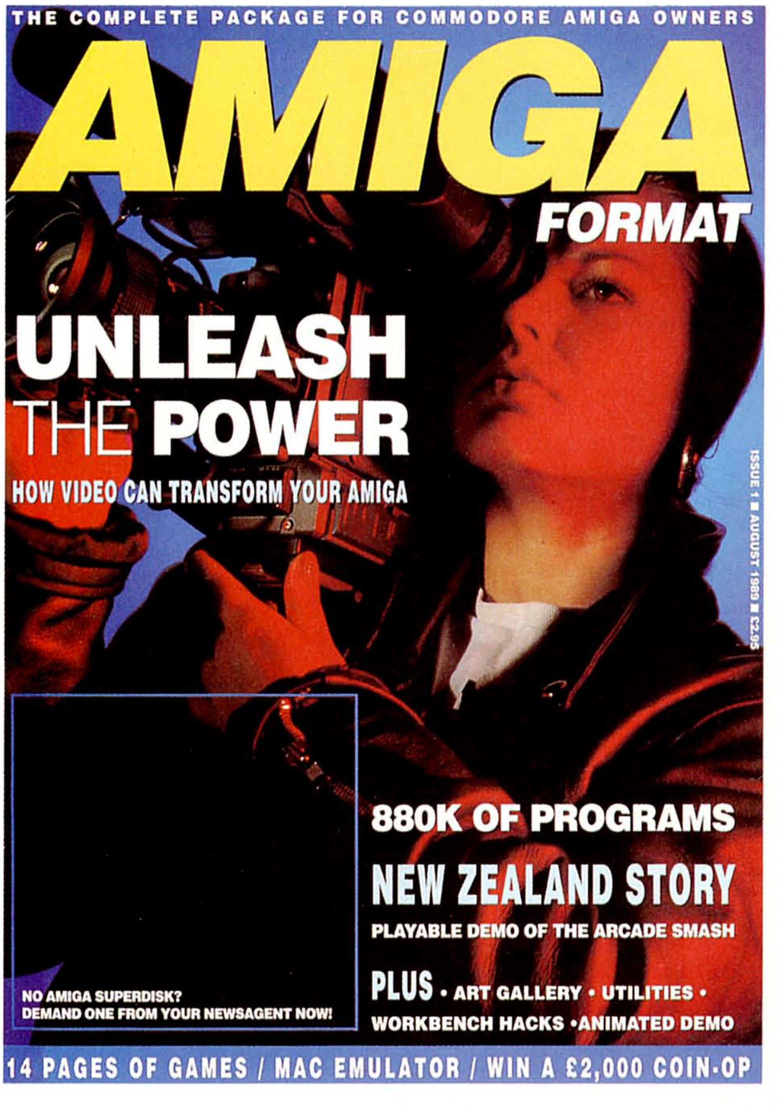
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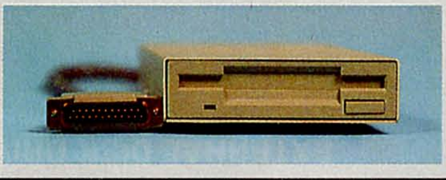
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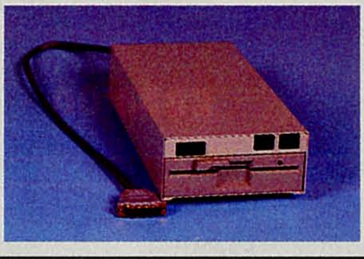
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WORDAGE

Where would we be without that most wondrous piece of software, the Word Processor?

Imagine a time when all text had to either be written by hand or punched straight onto paper using a typewriter. Seems fine for a while, but what happens if you make a mistake? You have to start again, of course! You could resort to the old correction fluid, but let's face it, Tippex isn't a patch on the trusty 'Delete' key!

Word Processing is one of those universal applications where, like it or not, the Amiga has to compete with machines as diverse as 16K Spectrums and the latest '030-based Sun Workstations. For many computer users, a computer without a decent word processor is like a Ferrari without wheels. But what should you be looking for in your ideal partner… er, or should I say word processor?

Don't be a Wimp

Choosing a word processor isn't as clear cut as it always used to be. The conventional definition of a word processor was merely a program that allowed the on-screen manipulation of text: but these days, machines such as the Amiga have spawned a new breed of word processor, the Word Publisher (that's what those PR people like to call them, at any rate!)

This new breed of word processor goes far beyond the conventional definition to include many features previously only to be found within powerful desktop publishing packages. Only with the advent of low-cost WIMP-based systems has the Word Publisher been possible.

While all those rather nice windows and icons supposedly make a package easier to use for the novice, they can often have the reverse effect when applied to basic word processing. Not only that, but the continual process of having to swap between keyboard and mouse can slow down your work rate considerably. Word Processing just seems to be the one exception where the simplicity of a package is often its strength.

Before choosing your word processor, the first thing you must decide is whether it's a straight word processor you're after or the more presentation-based Word Publisher. If the main use for your Word Processor will be to produce letters to the bank manager, bulk documents etc, then you're not going to need a package that allows you to drop flowers and other clip-art all over the page. If, on the other hand, presentation is all-important to you, then a Word Publisher may be the one to go for.

What To Look For

By the very nature of word processing, word processors are built on a set of standardised tools such as cut, paste and copy blocks, set margins, justify, search and replace, underline and embolden etc. If your chosen word processor doesn't have these most basic of functions in one form or another, don't touch it with a barge pole!

One particular area of word processing that is often sadly lacking in Amiga word processors is that of screen update speed. While fancy fonts and colourful charts may make a package look powerful, many graphics-based word processors often suffer from extremely slow screen update – If your word processor can't print the characters as fast as you can type then there's something seriously wrong!

The Amiga can be a powerful word processing tool, but which package is best for you? JASON HOLBORN surveys the cut of the crop.

What basically makes a word processor different from its competitors are those extra features that extend basic word processing to make life even simpler. Here's a quick run-down of some of the features you should be looking for:

Spell Checker

For most people, a spell checker is an obvious choice as an add-on. So as not to disrupt your working too much, it is important the the spell checker is built into your word processor – having to leave your word processor every time you wish to carry out a spell check can seriously affect the creative flow!

Spell checking comes in several forms. All should offer the bog standard 'check document' option which, as the name suggests, checks every word within your current document by comparing it with those stored within a disk-based dictionary. Also worth checking for is a 'check word' option that can save a lot of time when you just wish to check a single word. If the spell checker doesn't support this, you'll have to sit back and wait while the entire document is checked.

Some spell checkers will also support 'continuous spell checking' which basically checks every word as you type it, thereby eliminating the need for a full document spell check once you've finished writing. Although this is theoretically a good idea, it can very often slow down your word processor to an almost unbearable degree.

Thesaurus

One feature that is starting to become increasingly popular amongst word processor users is the Thesaurus. Some of the writers among you may use the infamous Roget's Thesaurus, which can be a great help when trying to impress people with your mastery of the English language.

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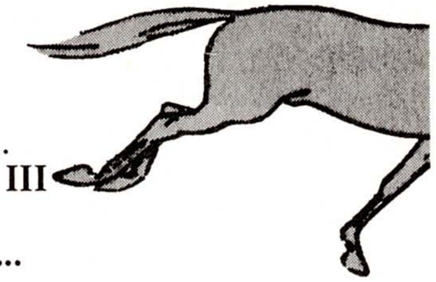
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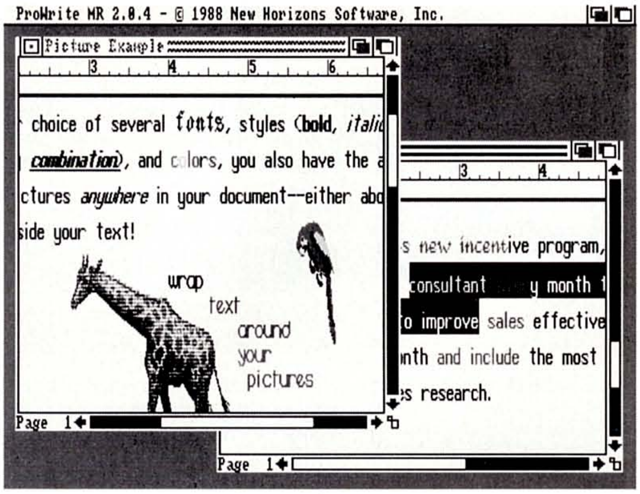
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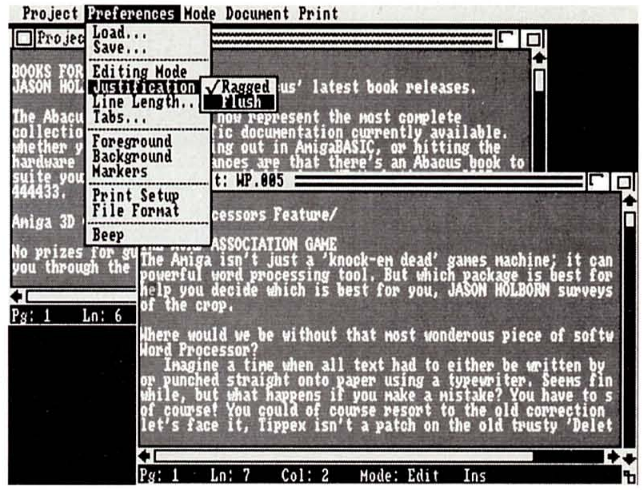
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■ If only all Amiga word processors were as attractive as *ProWrite 2*!



■ *Scribble! Platinum Edition* – not a bad little number at the price.

A Thesaurus will basically offer as many alternatives to a given word as possible, by cross-referencing the meaning of a word against those stored within its dictionary, a bit like a spell checker, really. Although a Thesaurus is genuinely useful, they aren't always to be trusted implicitly!

Mail Merge

If you're using a word processor to produce mailouts for a club or business, then a mail merge facility is more of a neccesity than a luxury. These handy little add-ons are used for producing personalised copies of a large number of letters without having to make the neccessary changes yourself. All you do is to create a standard letter within the word processor, marking out the parts of the letter that should contain the person-specific data to be inserted. The actual data to be inserted into each letter is then either read from a separate text file or, if the word processor supports it, straight from a database.

Graphics

This is one feature that really sets the word publisher and the word processor apart. The ability to import some form of graphics can be very handy when you wish to illustrate a point without having to resort to reams of text. The obvious applications are within business presentation (graphs, pie charts etc) but subtle use of fancy fonts can enhance just about any document.

Most programs allow the loading of pictures with a large number of colours, although very few will retain more than about eight colours when the document is eventually printed.

ASCII Compatibility

Unlike other forms of data such as pictures, sound samples and animation, the Amiga still doesn't have a standardised file format for text files (EA's FTXT form was about as close as the Amiga ever got!) This basically means that if you're preparing text for use within another word processor, chances are that it won't load without alteration.

This, then, is where ASCII compatibility can be a real life saver. ASCII files are just documents files that have had all layout information such as margin settings, text styles etc stripped out. This makes them usable by other word processors and can even be used to produce source code for your favourite programming language.

What's The Word?

What follows is a brief round-up of some of the most popular and most interesting word-processing packages for the Amiga.

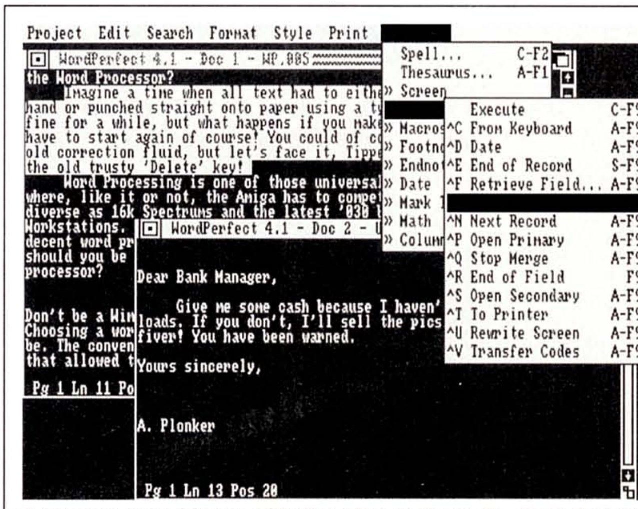
WORD PERFECT

£230 ■ Sentinel Software
(0932 231164)

If you ever want to impress your word-processing pals with name dropping, just try saying 'I use *Word Perfect*' occasionally. *Word Perfect* is one of the big names within the industry and you'll find nearly every credible business machine running it in one form or another.

Word Perfect Amiga comes on four disks and is bundled with a weighty 500-page manual. As far as straight word processing is concerned, *Word Perfect* does it all: it has massive dictionaries for the spell checker and thesaurus and is packed with editing features. Although the program supports intuition windows and pull-down menus, the program still retains the same feel as its PC parent. If you use *Word Perfect* on your PC at work then this'll be a good thing, otherwise you could end up feeling rather lost.

Word Perfect will undoubtedly fullfil even the most demanding of word processing applications, but the program is rather overpriced for what it offers. I just couldn't help feeling that what you're really paying for is the *'Word Perfect'* name!



■ Impress your friends with the king of them all, *Word Perfect*. One of the original big business WP packages, this one.

SCRIBBLE! PLATINUM EDITION

£49.95 ■ HB Marketing
(0895 444433)

Scribble! has been around for almost as long as the Amiga itself, but the program still remains one of the most powerful word-processing systems available.

Past releases of *Scribble!* have defiantly remained text only, but *Scribble! Platinum* now includes limited graphics support. The new version also now runs in its own configurable custom screen, leaving the Workbench screen less cluttered.

Where word-processing features are concerned, *Scribble!* has them all. The program also provides comprehensive mail merge facilities, a 104,000-word spell checker (including both scientific and technical dictionaries) and a 470,000-word thesaurus. While screen update is generally fast, it can slow down considerably when scrolling through a large document.

Before the arrival of *Protext*, *Scribble!* was my own personal choice for straight word processing due to its simple, no-fuss design and powerful editing facilities. While there are better word processors now available, the relatively low price makes *Scribble!* highly desirable.

PROWRITE 2.5

£89.95 ■ HB Marketing
(0895 444433)

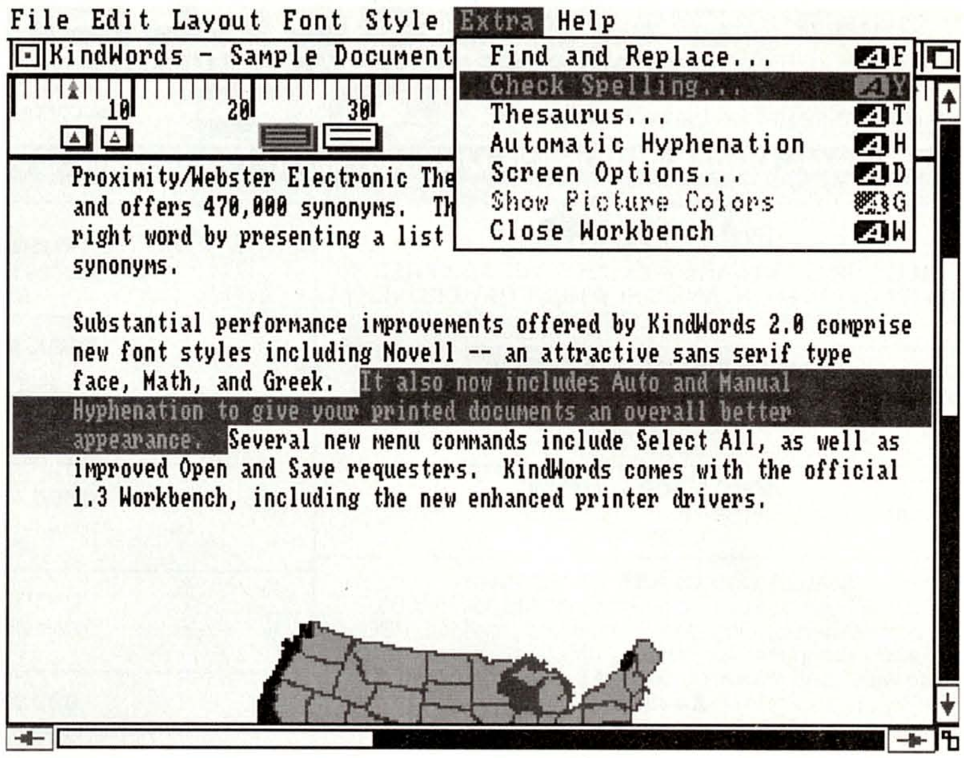
ProWrite was one of the original word publishing programs to appear on the Amiga and has since been updated to version 2.5. Even though it has been available for a couple of years, the program still stands up well against the competition.

ProWrite is completely integrated into the Amiga windowing

environment and is without doubt one of the most attractive-looking word processors available (bar *Pen Pal* of course!). The program boasts a full WYSIWYG display, 95,000-word spell checker and DTP-like control over imported pictures (but no thesaurus).

Any IFF picture can be load in and pasted onto the page (including HAM pictures). Unfortunately, regardless of how many are used within the original, only eight colours are actually displayed. Once a picture has been pasted down, it can be cropped and resized to suit your needs. Just as in a DTP package, text can also be made to run around a picture.

ProWrite includes all the standard editing features, but the screen update speed can be rather slow when working on large text files. *ProWrite's* main competitor is undoubtedly *Pen Pal* which, although the latter costs about £40 more, still manages to beat *ProWrite* in every department.



■ ***Kind Words 2* in action. Still a relative newcomer to the Amiga WP scene, although now very widely-owned thanks to its inclusion in a couple of very useful bundling packages from The Disc Company.**

KINDWORDS 2

£49.95 ■ The Disc Company
(010 331 4553 1053)

While *KindWords 2* is still relatively new, the program has become one of the most popular Amiga word processors available, due to various bundling deals which have gone down well with Amiga owners. Currently, *Kind Words 2* is being sold within two separate bundles, the Amiga Starter Kit (£69.95) and the Amiga Home Office Kit (£149.95).

Kind Words is another in the flourishing breed of 'Word Publishers' that allow the importation of IFF graphics. Unfortunately, only 16 colours are used regardless of the format of the original and, rather disappointingly, text cannot be run around a graphic once it has been placed on the page. Unlike all other word publishers, *Kind Words* employs its own 'SuperFonts' system which supposedly provides better quality results when printing, which it probably does. Where word processing features are concerned, Kind Words has a fairly complete selection, although you certainly aren't spoilt for choice. However, the program does have a 100,000-word spell checker and 470,000-word thesaurus. Screen update is a tad slow and the user interface is a bit quirky, but recent bundling deals make *Kind Words 2* very good value for money.

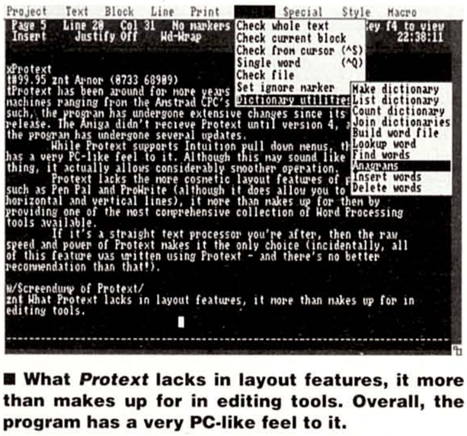
TRANSCRIPT

£39.95 ■ HB Marketing
(0895 444433)

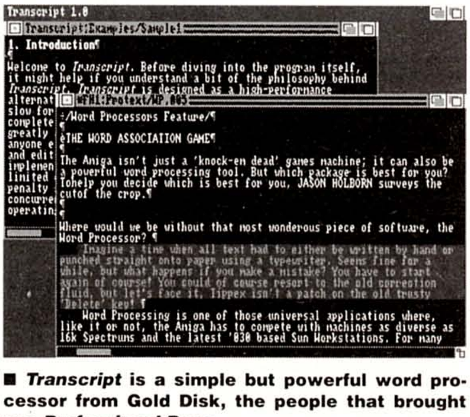
Transcript is one of the most recent (and cheapest) additions to the word processing ranks. The program was produced by Gold Disk in Canada, the company that brought you the powerful *Professional Page* DTP package. With a pedigree such as that, you'd be right to expect a lot from *Transcript.*

The program is a straight text editor that sacrifices many of the more cosmetic features of the competition in return for raw speed. Unfortunately, this does tend to make the program look rather unprofessional, but as we all know performance is the most important aspect of any program. *Transcript* boasts a 90,000-word spell checker, a unique auto indexing option and full mail merge facilities.

Many of the standard text processing commands within *Transcript,* such as justification etc, are carried out using embedded codes. While these codes are powerful, you cannot (in the case of justification) see the results until the document is printed.



■ **What *Protext* lacks in layout features, it more than makes up for in editing tools. Overall, the program has a very PC-like feel to it.**



■ ***Transcript* is a simple but powerful word processor from Gold Disk, the people that brought you *Professional Page.***

Simplicity and speed are undoubtedly *Transcript's* greatest assets. If you want to use your word processor to produce very large bulk text files then *Transcript* is the solution: otherwise, you may feel rather limited.

PROTEXT

£99.95 ■ Arnor
(0733 68909)

Protext has been around for more years than I dare to remember on machines ranging from the Amstrad CPC to the IBM compatibles. As such, the program has undergone extensive changes since its original release. The Amiga didn't recieve *Protext* until Version 4, and already the program has undergone several updates.

While *Protext* supports Intuition pull-down menus, the program has a very PC-like feel to it. Although this may sound like a bad thing, it actually allows considerably smoother operation.

Protext lacks the more cosmetic layout features of programs such as *Pen Pal* and *ProWrite* (although it does allow you to draw horizontal and vertical lines), but it more than makes up for them by providing one of the most comprehensive collection of word processing tools available.

If it's a straight text processor you're after, then the raw speed and power of *Protext* make it the only choice (incidentally, all of this feature was written using *Protext:* and there's no better recommendation than that!) ■

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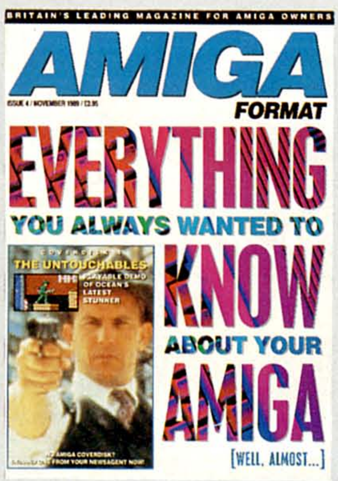
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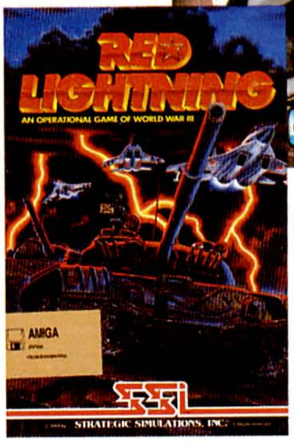
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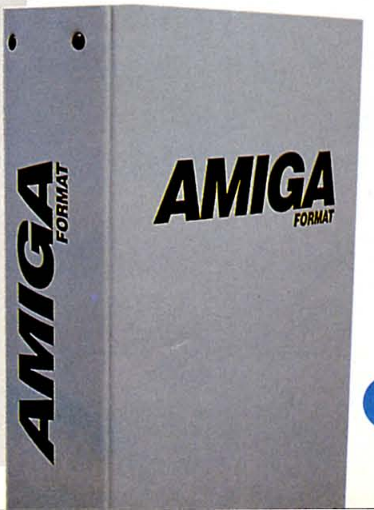
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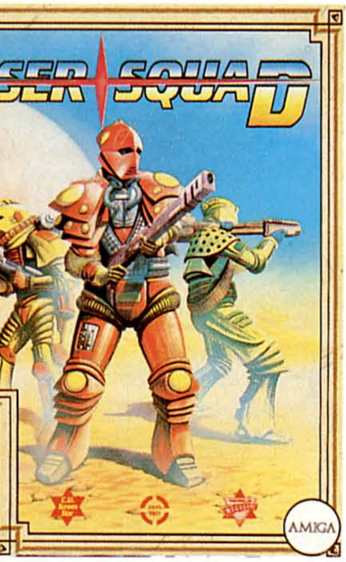




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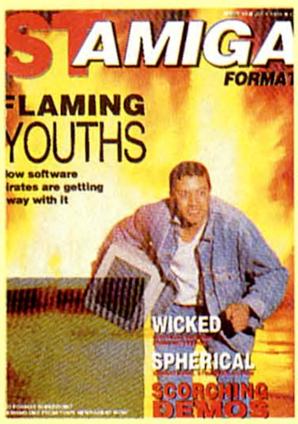
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COMPLAIN ABOUT COMPLAINTS

I demand to complain about the people who complain about *Kick Off*. Especially Daniel "I'll slag off anything I paid for" Silver.

Okay, so it gets boring after the first 6000 plays in one player mode with its smooth and fast scrolling. But in two player it's in a class of its own. My friends and I have started a mini league and my Dad has to tell us to keep the volume of the 'Yeah', 'Take that you mother' and 'Aaarrrgh's' down.

So, Daniel, why don't you make a friend and find out what it's like to beat the pants off a friend or enemy.

James Coulson
Nounsley, Essex

FEARS REALISED?

I recieved October's *Amiga Format* last week and my initial feeling was one of disappointment; that what I feared from the start is now happening. *Format* is turning into yet another games review magazine.

My use of an Amiga is for video, graphics, education and business. I originally chose *ST/Amiga Format* over *Amiga Computing* as not only were games less of a feature, but to someone new to computers, the equipment reviews and articles were very well written, without being superficial. I especially liked the little boxes with explanations of words and devices mentioned in the articles. I also found *ST/Amiga Format* more readable than the 'international' magazine.

Now the magazines have split, I have faithfully followed *Amiga Format* in the hope that what I want from the magazine will be continued. To some extent it has, there are some very good articles, but to my mind there is an indisidious change creeping in. Perhaps presentation has something to do with it. To open the magazine hoping to see the contents page only to be confronted with Batman was annoying. The articles I wanted are hidden in amongst and sometimes split up by advertisements. It also seems that more of the magazine has been given over to games.

Your *ST/Amiga Format* Questionnaire was interesting, but I hope can be interpreted wisely. Do the 56% which use the magazine for leisure only play games I wonder? Do not forget that there are 44% of us that are primarily using our Amigas for other uses. (I did not vote).

The Amiga deserves and needs to be taken more seriously in art, education and business. If it does grow in these areas, it cannot help but have a spin off for games. There is a new magazine on the stands especially for the Amiga games. Please lets not have another one. Can you afford to lose 44% of us?

Francis Bunker
Dyfed, Wales

The coverage of games has not been increased until this issue. There will also be greater games coverage in the next issue – in both cases it is to reflect the fact that Christmas is the biggest time of year for games. This does not mean the 'serious' side is losing out though because the magazine as a whole is expanding in size – you will find there is more in that line as well.

WHY DON'T YOU KICK OFF?

I know that it's a wind up and that you'll probably be laughing at me this instant, but I had to write on the off chance that Mr Silver's letter in the October issue was for real. If that's the case then I would like the opportunity to answer each of his critisms about *Kick Off* individually.

1. Is it really that important that there is no option to define your own name? Does it detract from the game play in any way? I think not. Anyway, in the league option you can define your team's name till your hearts content.

2. Forgive me if I'm wrong, but I was under the assumption that the letters R-E-F-E-R-E-E spelt referee, and that these letters appear before each game along with a name next to the said letters if you win the toss or not. Ah, I understand Mr Silver, you were playing the game in Dutch!!

3. Maybe some of the referees are strict, but the only time I have seen all of the computer's players sent off was when I deliberately tripped over their legs; even then I was skillful enough to not kick the ball out of play for a throw in by the computer.

4. The arrow does not freeze for a split second, and I personally have saved dozens of penalties, so they are not impossible to save.

5. I agree, the scanner does sometimes become redundant on the international level, and some teams colours are hard to see on the scanner, but surely the scanner is still useful for set pieces.

6. I have never experienced the computer taking control of my player and doing sliding tackles that were out of my control. What I think happened Mr Silver was that a computer controlled player did a sliding tackle, and then as the ball moved towards that player, that player came under human control as he was nearest the ball. If your player gets sent crashing to the ground it is known as a foul and it is the referee's prerogative as to whether or not to call that a foul. I have never experienced great dificulties in shooting straight, could it be that you are not the greatest *Kick Off* player in the world?

7. I agree, the sound is awful, but who needs great sound when you've got a game this good.



I hope that puts the record straight, and all I can say is keep up the good work Anco and *Amiga Format*.

Steven Howard
Oulton Broad, Suffolk

SEEDY ROMS TO GROW?

I would like to bring up the subject of the future of CD ROM drives as a replacement for conventional disks.

By using the CD format programs could be expanded without space being a problem, it would also cut out the need for those annoying disk swaps.

The use of these CDs would solve the piracy problems for the software houses: can you imagine pirates splashing out hundreds of thousands of pounds for the equipment needed to produce these disks? You may think the same for software houses, who can afford that equipment. But if you think about it, the amount of money lost through pirates would soon pay for the change of formats.

This format would also deter the casual copier, who gives a copy to all his mates (cost has

nothing to do with it – if it can be copied, people will copy it).

The old disk system could be used in tandem with the new system as a data storage medium – just for those who can't afford hard disk drives.

In terms of cost I am sure that because the hardware is already availiable, then to adapt it would be very easy (for the Amiga) and I can't see the price being higher than the present average of about 24 quid, when you consider music CD's only cost 12 quid a throw.

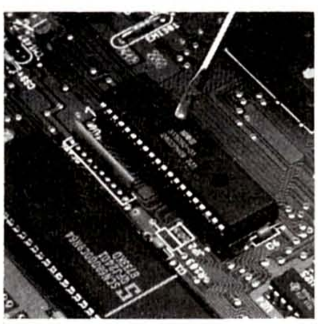
Just think it would kill off the virus problem as well, and no more disks crashing due to it being left on the disk drive. Think about it and let's hear some more comments from other readers, and possibly from people in the software houses.

Tim LLoyd
Hong Kong

SPARKS FLY

Further to your article in Issue 3 (October'89) by Jason Holborn, 'DIY Kickstart'. I feel I must write to express my horror on reading this incomplete (so called step by step) instructions on how to fit a 1.3 Kickstart chip on an Amiga.

Warnings were given informing of impending doom, I admit, but including phrases such as: "holding any metal pipe" as a safety tip, can only be taken as



■ **Taking care with Kickstart.**

complete incompetence and irresponsibility.

As a highly qualified T.V. and satellite engineer, I can inform you that this is an extremely unsafe thing to do at worst, and very bad practise even if the computer is switched off and isolated.

You do of course realise that you could be responsible for a lot of "blown up" Amigas, and bad feeling towards yourselves.

However if I may be permitted, I would like to go some way to try and avoid some of the impending damage caused by arousal of interest in enthusiastic amateurs.

Please print this letter. Come on don't shy away from constructive critisism.

1) Unplug and isolate computer and wait 5 minutes.
2) Remove 6 screws on under side.
3) Gently prise top cover from computer, using a small screwdriver, at the side of the computer (level with the top of keyboard).
4) Unscrew and lift flanges on top of metal screen can.
5) Remove keyboard plug and lift keyboard clear.
6) Lift screen can top clear.
7) Wearing polythene bags on your hands, gently lift one end and then the other of the kickstart chip with the screwdriver (take your time).
8) Fit Kickstart 1.3, taking care to get it the right way round.
9) Reassemble.
10) PRAY – then switch on.

P.S. Take my advice and get it done by a dealer.

RC Bowen
Little Berkhamstead, Herts

Frankly I don't think accusing us of complete incompetence and irresponsibility can be construed as constructive criticism. Thank you for your additional instructions, the use of an insulating material on the hands is indeed a valid point which we should have made. However, as for being responsible for 'fried' Amigas, the warnings given on the article were ample in my opinion. If anyone who was not familiar with handling computer components chose to ignore them, there is not much we can do about it.

P R I Z E W I N N E R

FLIGHTS OF FANCY

Whilst wading (no pun intended) through a batch of new computer mags I was intrigued by the number of new flight simulators both recently released and 'in the pipeline'. Being an ardent flight sim addict, having used everything from *Psion Flight Simulator* on the good old Speccy to Sub Logic's *FSII* and *Jet* on both IBM and Amiga and of course *Falcon* and it's new mission disk, I have decided to put pen to paper, well printhead to paper actually.

O.K. so flight sims do seem to be getting better but are they actually giving us, the end user, what we really want?

Do we want to be looking at a plain green/yellow/blue landscape and constantly splashing Migs that look like shoe boxes on wings, factories that look like shoe boxes without wings and flying over flat terrain that at best has a couple of pyramid mountains?

For my part I would have to say no! It's fine to take off and find a simulator that goes in for a bit of depth in the actual game strategy, as *Falcon Mission Disk 1* does, but I am now getting the distinct feeling that modern computers like the Amiga, ST and Archimedes are capable of so much more and that we the users must ask for it.

Personally I would like to see:

1) More realistic scenery, fractalised perhaps, even if it does mean five missions instead of ten.
2) Speech used instead of stupid notes at the top of the screen.
3) Weather effects. Imagine doing ground attack in heavy rain or fog!!
4) In flight refuelling.
5) A flight 'tutor' system with verbal response to actually tell you what you are doing wrong.
6) A proper 'ground support' role where bad shooting could hit your own troops and cause Court Martial.

I can't see why any or all of these points are beyond the ability of some of the obviously very talented programmers that work on these simulators.

Having heard that Hi-Soft are currently creating a f/sim of the Panavia Tornado M.R.C.A. I can only live in hope that their offering will shape up better than anything else to date. How about a training mission through the Pennines or Scottish Highlands, they could throw in a few hang-gliders to avoid as well!

Seriously though I think the gameplay of *Falcon* is just about right, all it needs is better graphics for the terrain.

Roger Barefoot
Glynn, Co. Antrim



A HEAVY METAL WOODWORKER WRITES...

I'm sorry but I just don't believe that people like Chris Cannon actually exist.

I have never written into a magazine before but felt I had to this time. I am not usually the sort of person who slags people off but this bloke got right up my ****.

Firstly the 99.99999% of us intelligent readers realise that you try to produce a magazine that covers all aspects of the Amiga and, like it or not, games is one of them. I mean it's only 18 or so pages (including Gamebusters) of game reviews out of a total of 130.

Secondly the majority of people that write into Workbench are new to computers and find the Commodore manuals complete and total double dutch ********. What right has Cannon got to call these people devoid of conventional education when he can't even write a simple letter himself. I don't suppose my letter is anywhere near perfect, but its better than his and I'm a Heavy metal fan with a grade 4 in CSE woodwork.

Amiga Format has got to be the best value Amiga mag around, and you've got the balance of news, reviews, letters, humor, etc just right.

Most of us appreciate the effort that goes into producing such a high quailty publication, it's just a shame we have to put up with the occasional stupid ******.

Andrew Hockings
Harberton, Devon

MY MAGAZINE WON'T COME BACK

As you may be aware, *Amiga Format* is not available through local newsagents in Australia. It is

only availiable through specialist import shops which charge a horrendous Aus$16.95 (approx £9) an issue. Despite the price, all copies are sold in a week.

I mention this to illustrate the demand for your magazine here. A demand which is only partly being met by upmarket racketeers.

The Amiga is the second biggest selling personal computer in Australia. While the market may not be as big as the European or American markets, extra sales here can often significantly improve a company.

Computer and Video Games were recieving a healthy 10-15% of sales from the Australasian/Pacific region. Likewise, Commodore US was so impressed with Australian sales that it recruited its Australian manager to promote the computer overseas.

A readily available, good magazine at the right price will sell well in Australasia. Your current magazine fares well in this category. You should think about arranging overseas distribution.

But until you are able to distribute locally, could you please include overseas costs in your advertisements and subscription details for readers who wish to avoid high local mark-ups.

Simon Cobcroft
Beecroft, NSW, Australia

Our subscription page now carries details on overseas subscriptions – it's £40.95 for your part of the world.

MISSING VITAL COMPONENT

Well done to all at the office, *Amiga Format* is a credit to you all and the Amiga. The layout is very well proportioned, covering almost all areas of interest... except one. Many of us are into electronics, some to a greater degree than others, and it is with this in mind that I suggest some space for the "techies".

I personally would like information on constructing a user-port, maybe by way of the Centronics Interface? and of course some software to control it (In Basic and Assembler). Also, an analogue to digital convertor with a program to display all input/output states on screen. As a seasoned BBC model B and Master user I miss these greatly, as I am sure do many Amiga A500 owners who travelled the Acorn road, and for that matter the ex C64 owners.

Another suggestion: what about a series covering Amiga



■ **Angry? In pain? Tell us why!**

Electronics Faults and their probable causes with pointers as to which components to check or change? My reason for bringing this up is simple: I know of many people who have taken their out-of-warranty machines for repair and paid a small fortune for what might only have been a very minor fault, like a blown Ram chip, a power supply fault or even a blown fuse. Some people are making a fortune ripping off the unwary!

I'm no genius, but when my old Beeb developed a fault, I soon learned how to wield a soldering-iron and track down the fault. Often it was a hair-line crack in the track needing bridging (a £50 repair job?) Anyway a 'body-building' course for the A500 would be a great idea. This, coupled with some Fault Diagnosis info, could save many of us, armed with the most basic electronics gear like a multimeter and soldering iron, an awful lot of bread.

Also where can we buy the components? My old Beeb mags, were littered with adverts selling everything from a plug to a new board and case. Is someone hogging all the Amiga 'bits'?

And yes, I know the Amiga's circuitry is complex and electricity is dangerous, but even so there are many of us who would still like to 'have a go', before kissing our favourite micro goodbye for a couple of months and then having to pay some con man for the privilege. Keep up the standard.

P.S. I'm not knocking the "Workbench" pages; it's not bad... but we do need more electronics buffs!

George Blades
Whinhall, Airdrie

ARCADES ARE OKAY

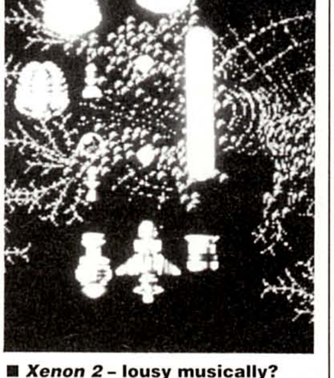
I feel that Wayne Hansford was spot on when he said that nearly all games being released at the moment are not worth the £25 asking price. Is it just me or are games just not as good on the ol'Amiga as they were on the C64? I used to enjoy playing the majority of games on my 64 but games such as *Blood Money, RVF Honda, Archipelagos* and *Rick Dangerous* just don't interest me for long. Great graphics and sound these games may have, but they lack the gameplay.

For £25 I can pop down the local arcade and have 125 goes on my favorite arcade games. If an average game on an arcade machine lasts 5 minutes then I can spend a good 10 hours playing for my £25 (providing the bouncers don't chuck me out!) There are a couple of games worth buying though which I happily forked out for – *Balance of Power 1990* and *Populous,* both of which I'm still playing.

Chris Clifford
Neath, West Glamorgan

UNSOOTHED SAVAGE BEAST

It has been said before that having a wonderful paint program won't make you an artist. It is equally true that having four- channel stereo sound won't make you a musician. Coming to the world of the Amiga from the C64, one of the things that strikes me about the games is how frequently the sound is superior to the C64 but the music is worse.



■ ***Xenon 2*** **– lousy musically?**

A large number of C64 games had excellent music written for them by two talented musicians, Rob Hubbard and Martin Galway. There doesn't appear to be anyone of equal calibre writing for the Amiga. The main problem is that programming teams seem to have no conception of appropriate music. A jolly chirpy little tune is entirely in keeping with a game like *New Zealand Story;* but an epic space shoot-em-up demands a dramatic 'Star Wars' sort of theme.

Consider a game like *Warhawk* on the C64, which was enormously enhanced by a stirring, atmospheric sound track

SNIPPETS

I wonder if you or any of your readers can help me. I am looking for a program which can generate fixture lists and league tables. I have seen such a program for the Amstrad PC and wonder if there is one for the Amiga either commercially or on PD.

Rob Marshall
Chorleywood, Herts

There is not one that we know of, but if anyone does then let us know because we could do with it as well.

I've noticed for a while now your screenshots of the various games, could you tell me how you get them? I've tried *Grabbit, Hermit and ScreenX* but the program locks the drives. Is there a program I can buy that will do the job? I would like to use some of the screenshots as menus etc.

VA Osborne
Bargoed, Mid-Glamorgan

We don't 'frame-grab' the game screenshots – they are done using a good old-fashioned 35mm SLR camera and colour slide film. We do grab most of the pictures for Workbench, PD and so on, but any program that has protection on it cannot easily be converted into an IFF file. Checkout Workbench for more details on how we do them.

I have just read Chris Cannon's letter putting *Amiga Format* down. Well all I can say is he must be blind, as I find the magazine most enjoyable. It is well laid out and very informative with very few errors.

Mr Cannon goes on about how a lot of the tips can be found in the supplied manual, that's great but how many people have read the manual, in depth, and then refer back to it. The tips supplied in the magazine usually outline what you can do in an easy to follow way, which is more than I can say about the manual.

T Lloyd
Hong Kong

Andy Smith has the best life known to man in my opinion, his eyes getting burnt out by a monitor and one or two hundred games. If you're ever in need of a game reviewer, I'm your man!

Illegible signature
Llandeilo, Dyfed

(Hubbard). The boppy little tune on *Xenon* doesn't compare, and lets down the game as a whole. *Xenon 2* is even worse; not only is the music inappropriate, its feeble. Repeating "dum diddle diddle diddle diddle" over and over again at four different pitches does not make a tune. And as for *Gemini Wing* – it may have lots of sampled instruments in it, but the sound track is so soporific it would be more suitable for a hotel lobby than an action game.

There are some exceptions – *Archipelagos*, for instance. But a lot of software houses would be well advised to consider their game music a little more carefully, and not just slot in the first off-raking from a *Sonix* demo they come across.

Roger Musson
Edinburgh

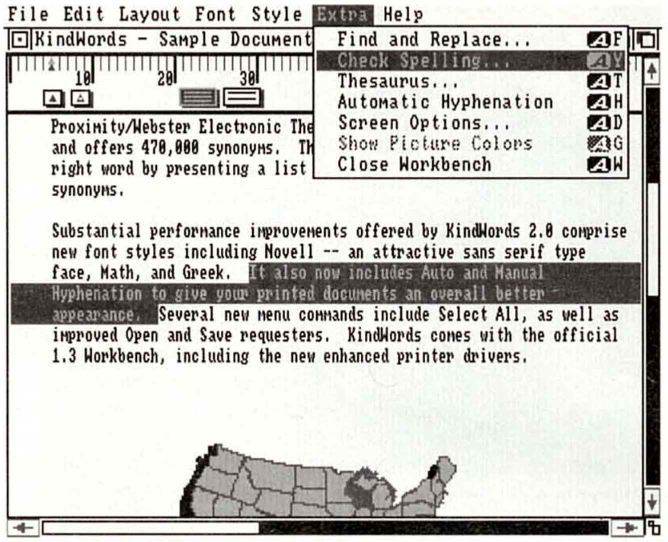
Personally I would like to see some old tracks re-used, never mind all this Acid house stuff that's flying around. How about The Clash doing 'I fought the law' or 'Police and thieves' for APB, *The Stranglers doing 'No more heroes' for* Indy Jones, *Little Richard doing 'Tutti Frutti' on the next fruit machine simulator or Pink Floyd doing 'The Wall' for the next* Breakout *game. Any more suggestions?*

SHOCKING DISCOVERIES

First of all I have a confession to make and then a couple of questions I hope you can answer. Firstly the confession, I had, up to 2 months ago, owned an Amstrad 464, and what makes my confession even worse, part of my job involves teaching MSDOS and to do that I use both an OPUS V and an Amstrad 1640, so I really should know what is going on in the computer world, alas not so.

Back to the confession, 2 months ago I was sat at home trying to put together a manual for my students, using *WordStar*, when all of a sudden, a bottle of Newcastle Brown, that just happened to be next to my computer, fell over of it's own accord, depositing its valuable contents all over the 464. Approximately 1 micron later, both I and the 464 accelerated across my bedroom at a rate of knots, only to be arrested by a brick wall. A newly decorated brick wall my mother might add.

Shit, says I, and promptly set off up town to buy a 6128, expansion me thinks. On arriving at my local computer shop I asked the owner if I could purchase a 6128,



■ **Importing graphics into *Kind Words:* see "Shocking Discoveries".**

"For what possible reason" says he, and immediatley shoves me into a room where he was giving an exhibition of an Amiga to some kids. "A home computer can't do that" says I, it can, it does, I bought one.

Now, I know that the price of some games on the Amiga are way past the buying capacity of Paul Getty, but some application programs are fairly priced, the opposite to the Amstrad. To complete, in fact to completely revamp the manual, I bought *Publishers Choice* after reading your article on it. This is where my problems begin, the package is excellent, with two exceptions. When I bought my Amiga I was given *Photon Paint* with it. Now all my mates have said that some of my artwork looks like some pictures drawn by Rembrandt, ten years after he died, so a simple to use package like that is a boon to me.

Problem 1 When I transfer a picture from *Photon Paint* into *Page Setter* it isn't as good as I thought it would be. Second problem, I cannot load a *Photon Paint* picture into *Kindwords* at all. Am I doing something wrong or is *Photon Paint* using a funny format?

My questions are – I want to put some photos into my manual so a little scanner, like the one advertised in your mag from Datel, would be ideal: question one, are they alright, and question two, are they compatible with all drawing programs. There is a third problem I have but I don't think you could help with that, its down there you know. I would be very grateful for any help in any of the areas I have problems with, and don't worry about sending me a T-shirt, they wouldn't make them in my size anyhow.

Bill Elliott
Lancaster, Lancs

I have the same problem with Grolsch bottles – they just won't stay upright after you've had four or five of them will they? There's only one solution, as soon as you've got the top off drink it in one, that way it can't get knocked over and spilt. Then again, perhaps this is why your pictures look like they do.

Here's Jason with the answers you needed...

The answer to your first question is that Kind Words *will not accept HAM pictures – try using a non-HAM package such as* Deluxe Paint *to produce your Kind Words art work (or alternatively, check out* Pen Pal, *as reviewed in this issue, that will handle both HAM and non-HAM pictures.)*

Most scanners are mono only, and therefore they should work fine in conjunction with both PageSetter *and* Kindwords. *Alternatively, have you considered a Video digitiser? NewTek's* Digi-View Gold *will produce images in any number of colours, ranging from as little as 2 colours to a massive 4096.* Digi-View *is available from NewTek on 0101 913 354 1146. My name's Jason Holborn, thankyou and good night.*



■ ***Access!* is one example of valuable software in the Public Domain.**

PD – WHO PROFITS OFF IT?

Ray Burt-Frost angered me in the same issue with his letter about public domain disks. I myself used to distribute public domain disks for £2.50 which at first seems much higher than Mr Burt-Frost's prices. However, Mr Burt-Frost expects the user to provide his/her own disks, padded bags and also to pay for postage so therefore he makes 50p-£1 per disk, I, and many other public domain distributors, supply my own disks and also pay postage and packing.

How can Mr Burt-Frost possibly say that charging 50p – £1 per disk isn't making a profit? Where does this money go – in his pocket or does he chuck it away? Surely we can't be expected to believe that it costs Mr Burt-Frost 50p- £1 to stick two disks in his disk drives and to wait a few seconds while the copying takes place then pack the copied disk up and send it away?

Big apologies to those who have ordered PD disks from me and have had their cheques returned – I have recently been ill and have been forced to leave work, etc.

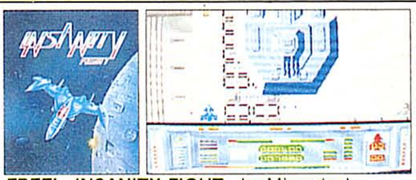
I am also in the process of moving home so all those people who answered my Empire query in *Format* Issue 2, please be patient! I had more than 80 people wanting to join in the game – my postman must be wondering why all my mail is marked 'Empire Query' by now!!

Chris Clifford
Neath, West Glamorgan

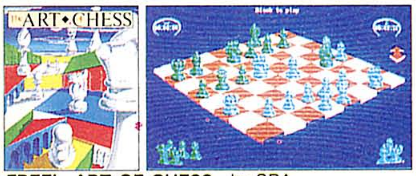
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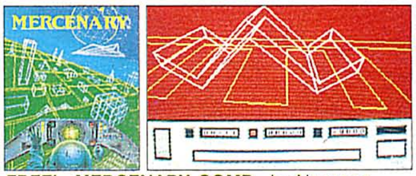
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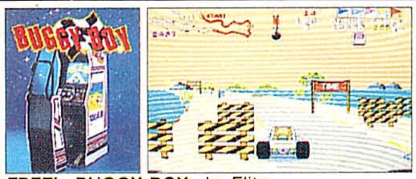
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GURU's MEDITATION

OH DEARY, DEARY ME

Weren't last issue's Previews interesting? It was, of course, the first in a series of puzzles where you have to fit the correct picture with its story, much more fun than having them worked out for you... you're not buying this are you? Okay, it was a spectacular cock-up on our part. Just for the record here is what should have gone with what.

PICTURE	STORY
4	8
5	4
6	7
7	6
8	5
11	12
12	11

Slight error on the *Interphase* review as well – the Intellect rating should have been 7 not 4. As for the Wargames feature, somehow or other the first page was printed last – it's all there but in the wrong order. It just goes to prove that if all the pages and screenshots in the mag were laid end to end, nobody would be in the least bit surprised. Our apologies.

CONGRATULATIONS

Our warm best wishes to Andy Smith and his new arrival – a bonnie baby girl, Molly. Mother and baby are doing fine, as is the proud Dad.

CAPTAIN WHINGE

...never before in the history of mankind has anybody ever seen this before - ever, ever, at all - and why? because it's an EXCLUSIVE, that's why, which means we got it first and reviewed it 33 seconds before anyone else did, even if it was via the telephone and just based on the sound effects, and everyone knows how important EXCLUSIVEs are because everyone reads the word EXCLUSIVE on the cover and thinks "wow, they must be really on the pulse if they can spell a word with that many letters in it", so I buy every magazine with the word EXCLUSIVE, particularly if it's an EXCLUSIVE preview of work in progress on a game design that might come out on a machine very similar to yours at some point in the future if the stock market doesn't fall by 22 points within the next 2 hours 13 minutes or Mars aligns itself with Venus while Virgo's cusp is..."

NEXT MONTH

The January issue will be on sale on Thursday 14th December. On the Coverdisk will be a playable demo of *Chase HQ*, Ocean's conversion of the coin-op cops'n'robbers, race'n'chase car game.

In the bumper Christmas issue you will find more pages of everything than ever before. There is a corking games section so you know what to go for as presents, plus a special look at the sims scene. Lots of other Christmas goodies like competitions, puzzles and a review of the year. Christmas won't be the same without it.

TANKS FOR THE PICTURES

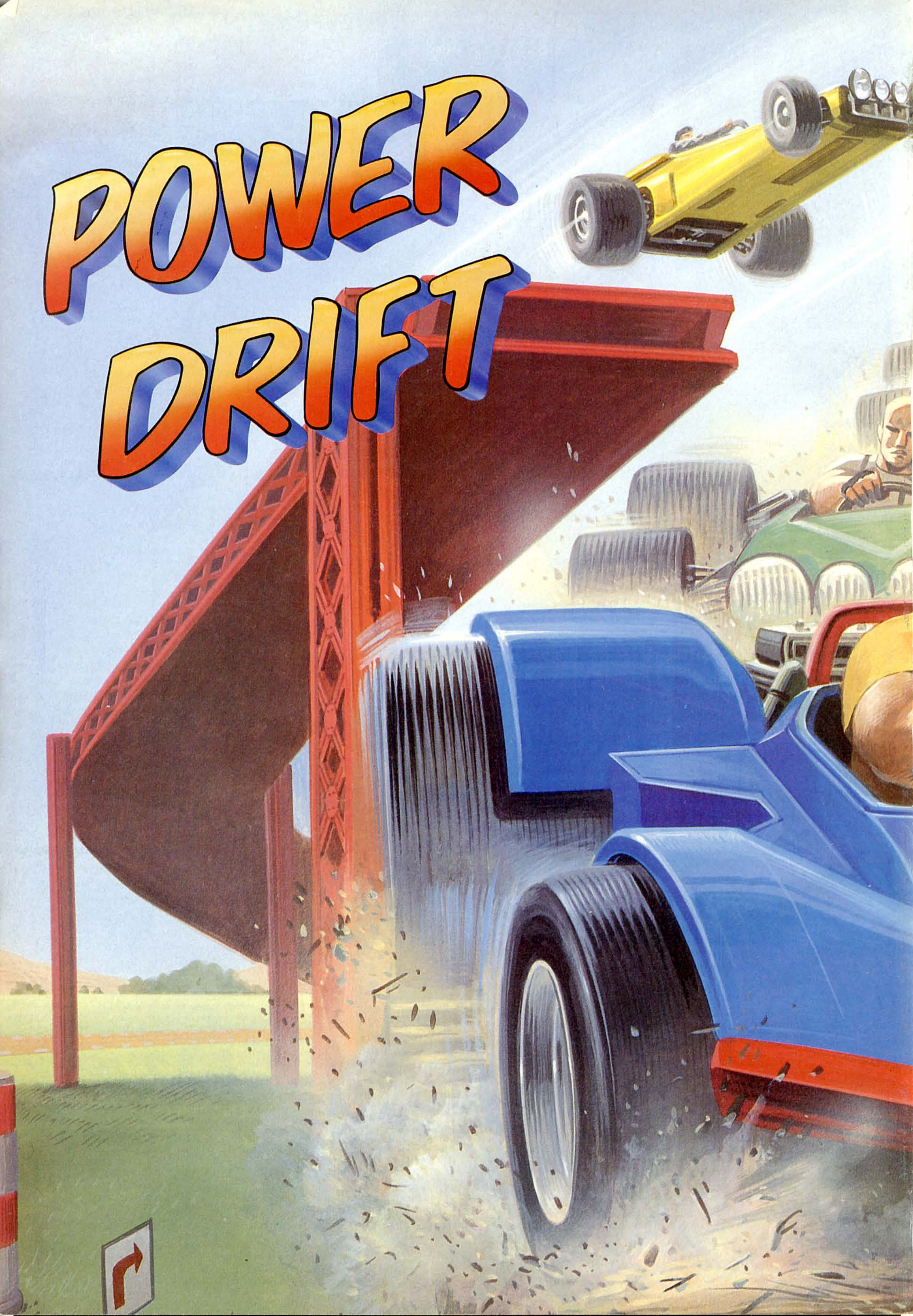
Belated 'thank you' to the Military Archive and Research Services in Braceborough, Lincolnshire, for the tank pictures used in last month's issue.

FORMAT MUSIC STAR

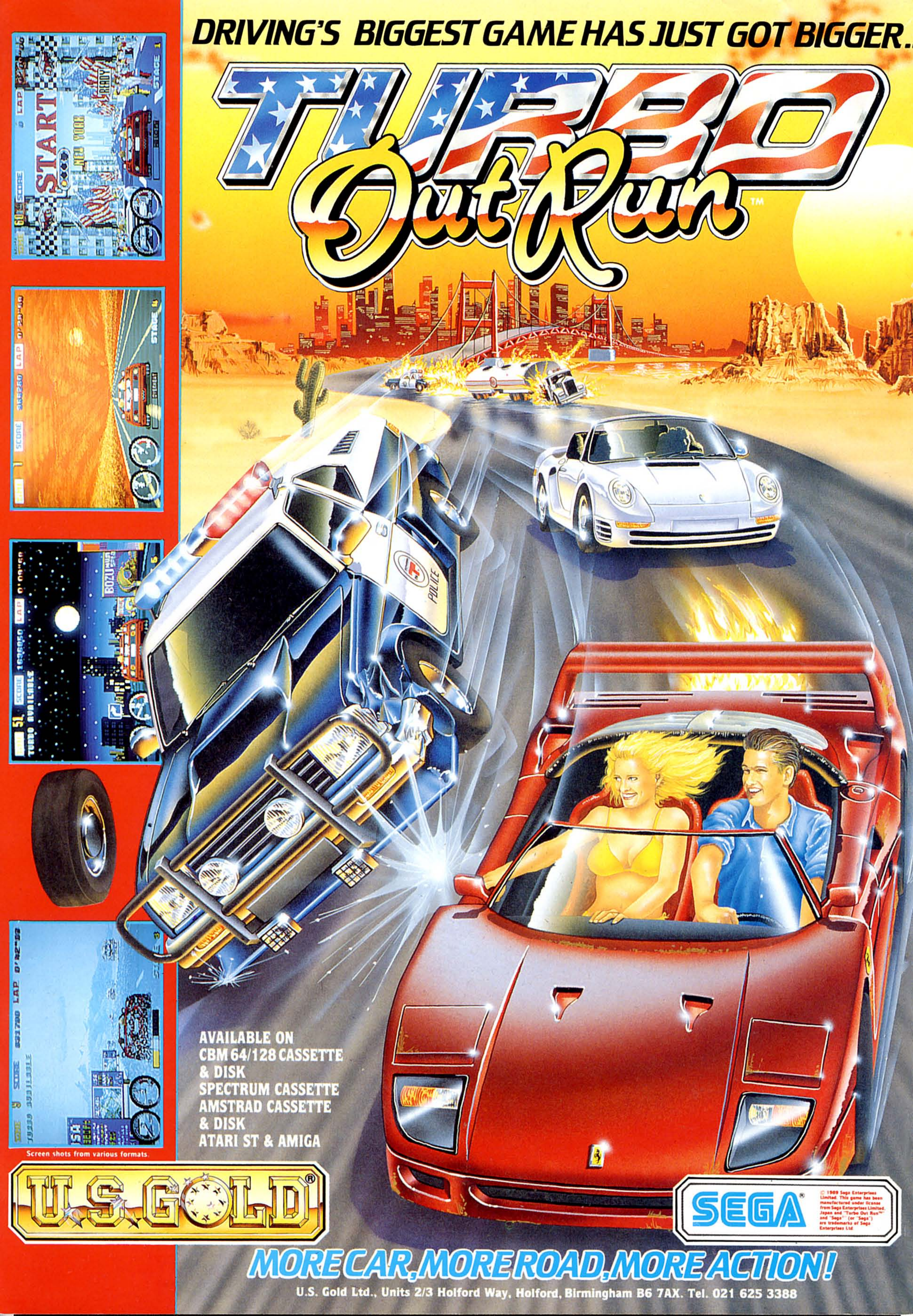
'Central Weekend Live', the Friday night live debate program which is received in many areas, features a live band in the current series. And who is atop the keyboards? Why none other than that well-known *Amiga Format* music editor Jon Bates. Readers who wish to put a face to the music column can spot him every Friday at 10.30pm. For a small fee *Amiga Format* staff will provide goodie bags of eggs and tomatoes with which you can pelt the screen on his every appearance. One program that will be of special interest to all readers will be the debate on November 24th which argues the case for and against computer control of music, with rumours of several rock stars making surprise guest appearances. The show is presented by Nicky Cambell. (Who he? – Ed)

COMPETITION WINNERS ■ Here are the winners of the Powerplay competition in Issue 3: Winner (TV and Video) - Ben Powell, Orlingbury, Northants. 10 runners-up (Crystal Turbo joystick) - Scott Cairns, Polmont; A Dyball, Gt Yarmouth; Kwon Wing Chim, Cardiff; A Downes, West Bromwich; Richard Harris, Chulmleigh; B Myers, Douglas; Lee Sherry, New Costessy; Kenneth Walkington, Kingsthorpe; Simon Williams, Cheam; David Fairweather, Saltburn. 10 runners-up (standard Crystal) - M Lumley, Morden; Shaun Jackson, New Addington; David Hogg, Douglas; Ian Slator, Hoddesdon; Robert Perkins, Bristol; Mr Chan, Ferndown; Gareth McAlese, Ballymena; John Pettitt, Benfleet; Ewan Aburrows, Wimborne; Richard Mann, Retford

ADVERTISER'S INDEX


POWER
DRIFT


START
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It's fast... it's furious... it's POWER DRIFT!
Choose from twelve wacky drivers, like Jason the Skinhead or Jeronimo the Mohican and rev your way through 27 stomach churning circuits!
Watch the dust fly and the wheels spin as you screech over a 'roller coaster' track and wave goodbye to your opponents!
Roar over mounds of mud, drive through the desert, slip 'n' slide on snow-covered tarmac and race your way through the night to face the final lap!
CAREFUL! Power Drift is no easy ride!
If you're heading for a collision hold onto your seat and enjoy those 360 degree spins before you bump back down to earth!
Burn some rubber, put your foot to the floor and scream back to the winning post!!
ACTIVISION
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